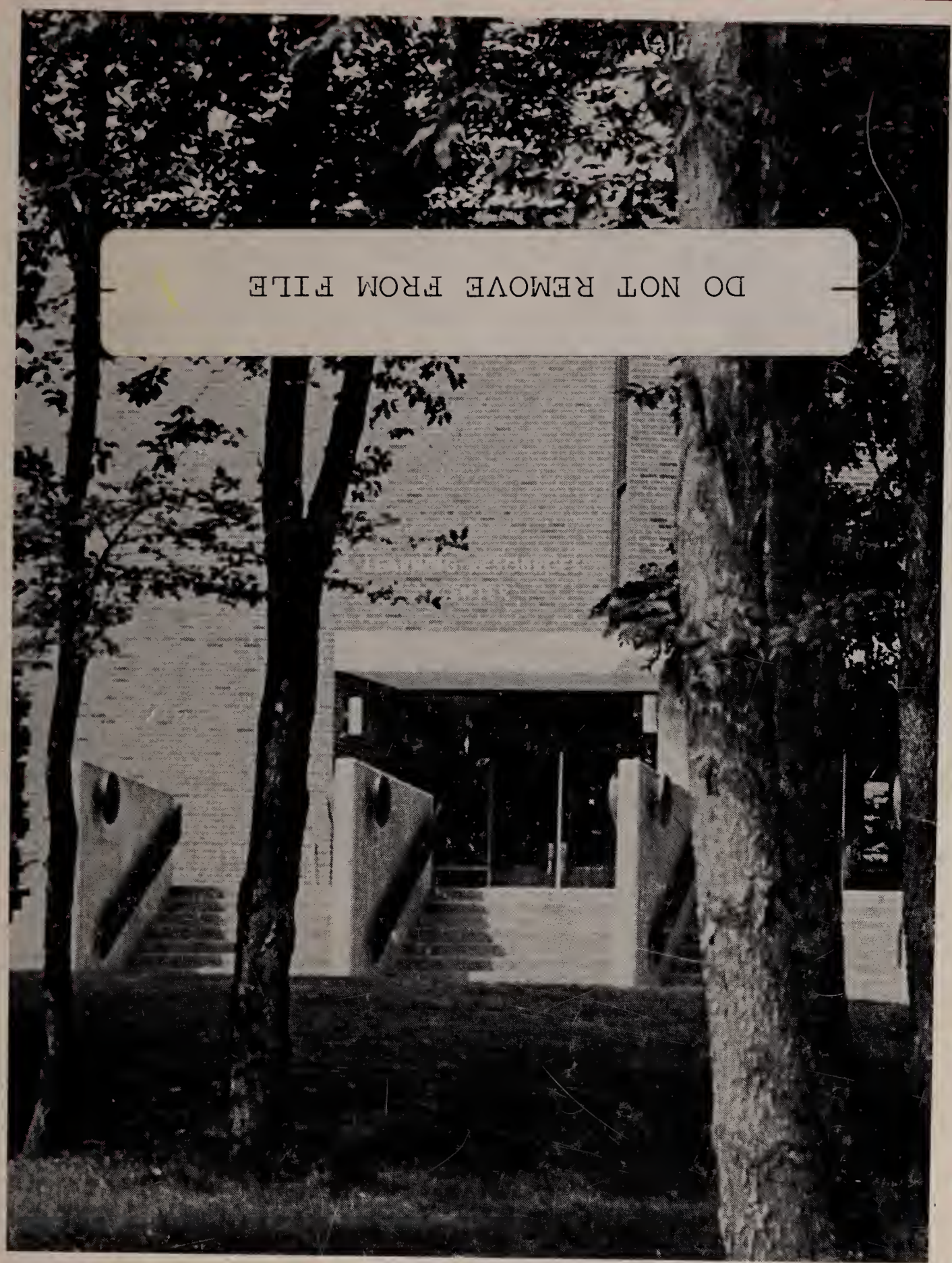

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Bulletin of Worcester State College

1978-1980

Bulletin of Worcester State College

UNDERGRADUATE CATALOG

486 Chandler St. Worcester, Mass. 01602

ACADEMIC YEARS 1978 - 1980

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The Undergraduate General Catalog of Worcester State College consists of programs, courses, degree requirements, academic policies and faculty. All students are responsible for observing the rules and regulations thus published. The College reserves, ofr itself and its departments, the right to change its announcements or regulations whenever such action is deemed appropriate or necessary. This Catalog is not intended to be and should not be relied upon as a statement of the college's contractual undertakings.

ACCREDITED BY:

National Council for Accreditation of Teacher Education
New England Association of Schools & Colleges, Inc.

MEMBER OF:

American Association of Colleges for Teacher Education, American Association of University Women, American Council of Education, American Association of State Colleges and Universities, College Entrance Examination Board, College Placement Council, Eastern States Association for Teacher Education, Massachusetts Council of Teacher Education, New England Teacher Preparation Association, Worcester Consortium for Higher Education. American Assembly of Collegiate Schools of Business, National Center for Higher Education Management Systems at Western Interstate Commission for Higher Education, National League of Nursing, American Association of Collegiate Registrars and Admissions Officers.

The College

Worcester State College, founded in 1874, traces its beginnings back to the mid-nineteenth century educational reform movement which introduced the idea of normal schools designed to prepare superior teachers for the expanding schools of that day. For many years Massachusetts youth found their way into a professional career, teaching, by way of Worcester State. But in 1932 as a result of new trends in higher education, the old normal school was phased out to reappear as Worcester State Teachers College awarding a bachelor's degree in education. However, this initial step was soon to prove insufficient as young America poured into college in unprecedented numbers after World War II. To this new generation, teacher education was not enough. They demanded wider opportunities than teaching and so Worcester State underwent yet another change, emerging in 1960 as a multi-purpose, liberal arts college with a wide variety of programs for a student body now drawn from across the nation.

Despite the changes, the emphasis now as in the past is on service to youth seeking a better life through education.

The primary interests and responsibilities of the WSC administration and faculty are in developing effective education experiences for undergraduate and graduate students preparing them for career opportunities as well as personal growth. Such experiences include class discussions and seminars, individual counseling with faculty members, independent study, or special field work and internships away from the campus.

Since the opening of the student housing complex in the Spring of 1973 and the Student Center in the Spring of 1978, the College is able to offer the opportunity to select and create the type of total educational environment that a student desires. In order to maintain proper balance within this dynamic system, all constitutents of the academic community engage in an ongoing dialogue concerning the nature of sound educational programs. This process provides the basis for innovation and change and is the foundation upon which the institution's philosophy is based.

Statement of Philosophy

Worcester State College is an urban, publicly supported institution of higher education which is committed to student development through undergraduate education, continuing education, graduate education and community service. Worcester State College is an institution with a strong commitment to liberal education. It aspires to the fullest possible development of the individual as the true goal of higher education. It recognizes that professional preparation must be liberal if it is to have lasting value, and recognizes that liberal education includes career objectives. The quality of insturction offered and the individual contributions of our graduates to society are the clearest measures of our aspirations.

Objectives

Worcester State's objectives are to graduate students at the undergraduate and graduate level, who are responsible members of modern society; knowledgeable of our western heritage and appreciative of other cultures; conversant with science, concerned with social problems, and respectful of human values; skillful in the process of analysis, able to judge between competing claims and creative in their thinking; alert and fluent in defense of fundamental rights and courageous in their beliefs.

Government of the College

The Board of Trustees of the Massachusetts State College System has direct governing authority over the College. In addition, the Commonwealth of Massachusetts has a Board of Higher Education which is a coordinating board for all public higher education in the state. The President of Worcester State College serves at the discretion of the Board of Trustees as the principal executive officer of the institution and reports directly to the Chancellor of the Massachusetts State College System. The Chancellor is appointed by the Board of Trustees and serves as the executive officer for the system.

The College governance system involves faculty, students and administrators in representative bodies which deliverate Worcester State College issues and recommend resolution to them to the principal executive office.

Gender and Number

For purposes of this Catalogue, the masculine shall include the feminine and the singular shall include the plural where the context so permits or requires.

Admissions

ADMISSIONS

Inquiries for admission to Worcester State College must be directed to the Admissions Office. This college is a multi-purpose institution dedicated to provide a quality education, in order to prepare our graduates with the necessary skills and depth of knowledge for entrance into career opportunities or further graduate study.

The Massachusetts State College System is committed to a policy of affirmative action designed to increase the number of enrollment opportunities for minority student applicants in State Colleges throughout the System.

Freshman Admission

Individual consideration of each candidate who applies is the rule in the Admissions Office at Worcester State College. Candidates applying to this college must supply the following:

1. Graduation from an accredited high school (or equivalent preparation). You must supply an official high school transcript including at least the first marking period of your Senior year.
2. Completion of the College Board Scholastic Aptitude Test.
3. Completion of the College Board Student Descriptive Questionnaire.
4. Completion of the Systems Application Form citing W.S.C. as one of your choices.
5. Payment of an Application Fee ($10.00, by check only).

Personal interviews are not required by all the colleges, but prospective students are encouraged to write for appointments and visit the college.

If you're a high school student in the Massachusetts area you can get an Application Packet from your counselor. Others should request the packet from:

Admissions Office
Worcester State College
486 Chandler Street
Worcester, Ma. 01602
752-7700

Contact the W.S.C. Admissions Office for application deadlines.

ADVANCED PLACEMENT

The Advanced Placement Program of the College Entrance Examination Board is available at W.S.C. An applicant must arrange to have the Advanced Placement scores sent to each college to which he is applying.

If you are accepted, you are encouraged to take the College Level Examination Program (CLEP) tests, for advanced standing, or credit purposes.

Candidate Reply Date Option

If you are accepted at Worcester State College you must do one of the following within 20 days of the receipt of your letter of acceptance.

1. Inform the college that you accept the offer of admission and pay all necessary deposits;
2. Notify the college that you decline acceptance;
3. Notify the college in writing of your desire to delay replying to the offer of admission until a time on or before the Candidate Reply Date of May I.

However, if you are accepted and offered residence hall accommodations, your space in the dormitory cannot be guaranteed for more than 15 days from the date of your receipt of the letter of acceptance.

If you do not take one of the above options within one month, the offer of admissions will be automatically withdrawn.

TRANSFER ADMISSIONS

Your transcript from your previous college will be the primary factor in determining your admission to W.S.C. You must supply an official transcript of all courses taken at all other institutions, and you must have successfully completed at least one semester at an approved college.

The regular application form must be completed and the $10.00 application fee must be paid.

All transfer students accepted who have paid the $50.00 tuition deposit will be interviewed for credit evaluation and preregistration.

To qualify for a degree, transfer students must complete a full year at WSC, that is, the equivalent of eight full courses or 24 semester credit hours. Credits earned elsewhere must be evaluated in terms of the WSC curriculum. In general, you can expect credit to be allowed for all successfully completed courses taken at an accredited college.

DIVISION OF STATE COLLEGE'S TRANSFER POLICY

The Massachusetts State College System affirms its intent to maintain flexibility in the transfer of qualified students into the State College System. For the implementation of this objective, the Massachusetts State College System has established guidelines and priorities.

1. Applications for transfer to any College in the Massachusetts State College System will be evaluated for admission on the basis of their previous College academic record.
2. The Massachusetts State College System will accept credits of a D or better earned in equal or comparable courses at the institutions of public higher education in the Commonwealth. (Maintenance of a C average does not insure transfer to a State College).
3. Whenever possible, degree credit will be granted for course work completed at Massachusetts institutions of public higher education. Courses which do not fit the degree program may be counted as fulfilling the open elective requirements of the four-year curriculum. The transfer student will be required to fulfill the same degree requirements as any other student.
4. Honors courses, programs of independent study, or Advanced Placement and College Level Examination Program (CLEP) advanced standing credit earned at another Massachusetts institution of public higher education will be accepted at any State College.
5. Whenever feasible, the State Colleges will not institute highly specialized courses needed for the degree program prior to the junior year.
6. A student must successfully complete one year as a full time student to receive a baccalaureate degree from any State College.*
7. The number of transfers accepted by each State College will be determined by existing vacancies and the number of applicants determined eligible under the above guidelines. Among qualified and eligible applicants, priority will be given to transfer students in good standing from within Massachusetts public higher education (11/9/72)

**Applies to the State Colleges and not to the Massachusetts Maritime Academy and the Massachusetts College of Art.*

COMMONWEALTH TRANSFER COMPACT

Statement of Policy

Throughout public higher education in the Commonwealth an associate degree from any community college signatory to the Commonwealth Transfer Compact will be honored as a unit and construed as: (1) completion of at least 60 hours of work toward a baccalaureate degree, and (2) completion of at least 33 credit hours toward fulfillment of the general education requirements for the baccalaureate degree. Further, all associate degree holders accepted for transfer under the Compact will be subject to no special requirements beyond those specified as major department and/or graduation requirements for students who originally enrolled in the receiving institution as freshmen.

Signatory institutions of public higher education in the Commonwealth of Massachusetts including Worcester State College will honor this policy and adhere to the following;

1. Definition of an associate degree transferable as a unit (contingent upon acceptance for admission) toward a baccalaureate degree as the equivalent of 60 credit hours of undergraduate college-level study, including;

(a) 6 hours of English/communication
(b) 9 hours of behavioral/social sciences
(c) 9 hours of humanities/fine arts

(d) 9 hours of mathematics/sciences
(e) the remaining credits to be on a college level.

2. The awarding, upon acceptance, of the full number of credits earned while enrolled in the associate degree program.
3. Continuous review and evaluation of the implementation of this policy and referral to the Massachusetts Transfer Review Council of problems related to student mobility.

Clarifications

1. Students changing programs (e.g., liberal arts to engineering(may expect that it will require more than four semesters to complete the sequence of a new major.
2. "D" credit will be accepted toward the baccalaureate degree, but a receiving institution is required to apply "D" credit toward a major only if it does so for "native" students, that is, students who enrolled in the four-year institution as freshmen.
3. This unit transfer policy will accomplish the twin objectives of (1) providing unlimited opportunities for instructional and curricular flexibility in the two-year college sector, and (2) assigning to each two-year college full responsibility for meeting standards of equivalence for all programs submitted as transferable.
4. Course credit for transfers from programs not conforming to Compact specifications will be evaluated by the receiving institution according to the applicability of those courses to the baccalaureate program in the major field of the student.
5. This Compact is consistent with recommendations of the Association of American Colleges, American Association of Community/Junior Colleges, and the American Association of Collegiate Registrars and Admissions Officers, represented in the publication Guidelines for Improving Articulation between Junior and Senior Colleges.

Financial Information

TUITION

Below are new tuition rates effective September, 1978, as voted by the Board of Trustees. Payment of tuition and all fees is necessary before registration is considered complete.

Full Time Tuition

(12 or more semester hours credit per semester):

In State Tuition	$250.00 per sem.
Non State resident tuition	$625.00 per sem.
Fees:	
Library	$ 10.00 per sem.
Athletic	$ 18.50 per sem.
Student Union	$ 15.00 per sem.
Education Service	$ 20.00 per sem. (entering students only)
Placement	$ 5.00 per sem. (for entering students only)

Late registration payment fee is $5.00 assessed on students who register or complete registration after the official college registration period.

Vietnam veterans tuition exemption must be renewed annually.

Part-Time Tuition

For undergraduates - Less than 12 semester hours credit per semester

In State Tuition	$ 20.00 per sem.
Non State Resident Tuition	$ 53.00 per sem. hr. credit
Fees:	
Library	$ 10.00 per sem.
Placement	$ 5.00 per sem. (for entering students only)
Athletic	$ 6.00 per sem.
Student Union	$ 5.00 per sem.

Vietnam veterans tuition exemption must be renewed annually at the business office. There is a nominal Vehicle Registration Fee also.

REFUNDS

Fees:

ALL STUDENT FEES are NON-REFUNDABLE after the first day of classes.

Tuition

Minimum forfeiture amount $50.00

1st week 33% Tu. fee chg. forfeited
2nd week 50% Tu. fee chg. forfeited
3rd week 66% Tu. fee chg. forfeited
4th week 100% Tu. fee chg. forfeited

Week ends as calendar on Saturday.

TUITION Refunds are considered only on TOTAL WITHDRAWAL from the college. If new Board of Higher Education scholarship is not recieved by the office by the 10th week of the semester or the date of the next semester pre-registration student will have to pay his own outstanding tuition bill and will be reimbursed by the college when the Board of Higher Education is received. "Alternate" is that any student with outstanding balance after the 14th week will be ADMINISTRATIVELY DROPPED – that is, even though classes are attended and courses passed, no marks will be forthcoming as student per catalog, has not officially completed registration by making full payment for tuition and fees.

FINANCIAL AID

The primary responsibility for meeting the cost of education belongs to the student and his or her family. Financial assistance from Worcester State College, which enables qualified students to complete the college's educational program despite limited family and personal resources, is considered a supplement to the family's contribution and is made without regard to race, color, or national origin. Assistance is determined by the availability of funds, the financial need of each applicant, and the number of applicants who are eligible to receive aid. Financial need is that amount by which the total costs of college attendance, including reasonable costs of transportation, room and board, and other personal expenses, exceeds the expected family contributions.

Applicants for financial aid must be accepted as students or currently enrolled at Worcester State College, and must be citizens of the United States or permanent residents. All applicants are required to submit a Financial Aid Form (FAF) to the College Scholarship Service, Princeton, N.J.,a Worcester State College Financial Aid Application before May 1 for the Fall Semester and before December 1 for the Spring Semester, and a copy of the parents' or student's previous year Federal Tax Return (1040). Applications received after these dates will not be acted upon unless additional funds become available. Forms are available in guidance offices or in the College Financial Aid Office.

Financial aid is not automatically renewable. Each year, students, in order to be considered for assistance, must reapply for financial aid using the same application procedures. Students will continue to be eligible as long as they demonstrate financial need and remain in good academic standing.

Financial Aid Programs Available Are:

Basic Educational Opportunity Grant (B.E.O.G.)

Applicants for financial aid will be requested to file the Financial Aid Form (FAF (FAF) and check the appropriate box for consideration of the Basic Educational Opportunity Grant Award. This grant is based on at least a half-time enrollment in an undergraduate program, and for students not having previously received a Bachelor's degree from any institution.

College Work Study Program (CWSP)

Provides students an opportunity to earn a part of their educational expenses by working in various departments or agencies either on or off campus. Assignments include office work, library, audiovisual, media, day care centers, social service agencies and internship programs.

National Direct Student Loan (NDSL)

A low cost, long-term loan available to students in at least a half-time program to be used to pay for educational expenses. Repayment of the loan at 3% interest begins 9 months after graduation or withdrawal from college. There are partial cancellation and deferral benefits for certain types of teaching or military service.

Supplemental Educational Opportunity Grant (S.E.O.G.)

Only students with exceptional need, who without this grant, would be unable to attend college are eligible for this grant.

Massachusetts Board of Higher Education Scholarship (BHE)

These scholarships for Massachusetts residents help defray the cost of tuition at the state colleges. Undergraduate students enrolled in a full-time program are eligible if they show financial need. Applicants must submit a Massachusetts Financial Aid Form (MFAF). Applications are available in guidance offices and college financial aid offices.

Massachusetts Higher Education Loan Plan (HELP)

Undergraduate or graduate students enrolled at the college or incoming students may apply to any local participating banking institutions for this loan to aid them in payment of their college expenses. The maximum a student may borrow is $2500 a year with an interest rate of 8 percent.

For further information please contact the Director of Financial Aid, Worcester State College, 486 Chandler Street, Worcester, Mass. 01602. Telephone number: (617) 752-7700 Ext. 214

Financial Aid Awards: Tuition and Fees Payment

Students are directly RESPONSIBLE for their own college bills. When student financial aid award checks are made out they are made out in the NAME OF THE STUDENT, and it is the student's responsibility to see that they pay all outstanding balances with these checks. The college does not function as a bank or a go-between for the students and their obligations.

Special Separate Billing (End of Semester)

Note: A separate billing to all dormitory students will be made to maintain the Damage Deposit level. This assessment is made by the Director of Housing. These bills are to be paid separately per semester, and inquiries as to damage assessment are made to the Director of Housing.

HEALTH INSURANCE

A student Health Insurance Plan is also available through the Dean of Students Office.

RESIDENCE HALLS

Worcester State College offers an apartment style residential complex to full time undergraduate students. Each living unit includes bedrooms, kitchen, living/dining room and bath.

There are three types of sleeping accommodations available to residents; singles, doubles, and multiples. Since singles and doubles are most popular, it is often difficult for new students to secure these accommodations.

Residence Hall rates for all accommodations are: $960.00 per academic year.

Although a space in the Residence Halls is provided on a contractual basis for the entire academic year, room rates are billed on a semester basis and must be paid prior to occupancy each semester. These rates were placed into effect in September of 1977 as voted by the Massachusetts State College Board of Trustees. These rates are subject to change by a vote of the MSCBA & MSCBT.

Room Reservation Deposit/Damage Deposit (RRD/DD);

All residents (entering, transfer and returning students) must pay a $100 RRD/DD prior to room occupancy.

A. The entering student accepted by the Admissions Office as a Resident Student must submit, to the Admissions Office, $50.00 of the $100.00 RRD/DD in separate check, at the same time as the $50.00 tuition deposit is paid. The date that these payments are due will be determined by the Admissions Officer.

B. The entering student accepted by the Admissions Office as a Commuting Student may, after completing all admissions requirements, submit to the Assistant Dean of Student's Office, $50.00 of the $100.00 RRD/DD with a signed agreement to be considered for a room assignment.

C. The Returning Resident Student must submit $50.00 of the $100.00 RRD/DD with a signed agreement at the time of room selection for the following year.

Payment of the deposit and resident's receipt of an agreement signed by the College will reserve a space until occupancy. The remaining $50.00 of the $100.00 RRD/DD shall be billed with room rent.

FOOD PLAN - MANDATORY FOR ALL FRESHMEN (Class designation identifies freshmen). The food plan is optional for upper classmen. The 1978-79 academic year rate is $286.90 (which includes 6% meal tax). Rates are subject to change.

VETERANS INFORMATION

The Veterans Office, Room 292, New Student Union Building, is open daily from 9:00 a.m. through 5:00 p.m. Those veterans that cannot come within those hours may find help at the Continuing Education Office Monday through Friday from 6:30 p.m. - 8:30 p.m.

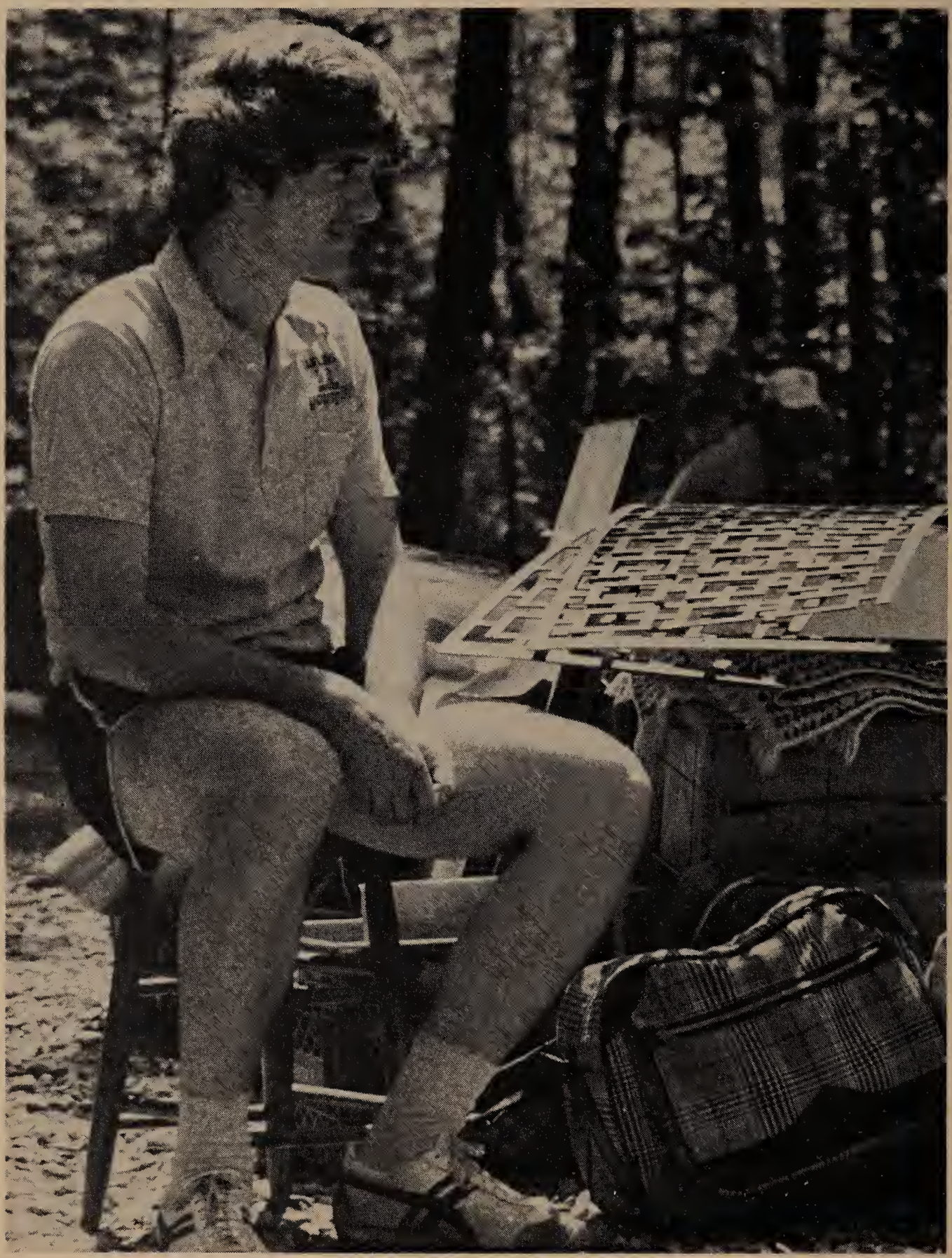
The purpose of the veterans office is to obtain proper forms and assist the veteran in obtaining entitlements from federal and state agencies. This office also acts as an information center, as well as providing for counseling relative to veterans matters

such as employment, housing, financial aid and tutorial assistance.

Standards of progress are demanded by the Veterans Administration:

1. If a veteran drops a course(s) or drops out of school - he/she must notify the veterans office at W.S.C. as well as the registrar. Dismissal from school due to poor grades will mean a termination of veterans benefits. Any overpayment from the Veterans Administration must be returned.
2. A "W" on a grade report that is not substantiated by an officially DATED and signed form at the registrar's office indicating extenuating circumstances will be considered by the V.A. as a course NOT taken as of the FIRST day of the semester. This may create an overpayment which must be returned to the V.A. under penalty of fraud.
3. Veteran's are required to sign an attendance list verifying attendance and course load. Schedules may be obtained at the Veterans Affairs Office.

Campus Resources



Alternative For Individual Development Program (A.I.D.)

The A.I.D. Program is an educational assistance program for students from minority and disadvantaged backgrounds. Included in this category are educationally, culturally and economically disadvantaged students.

The A.I.D. Program provides supportive services to students with the recognition that without such services, the students are not likely to achieve their educational objectives at Worcester State College.

The following services are available by appointment:

a. Counseling
b. Academic Assistance
c. Effective Study Skills Training
d. Financial Aid Information.

The A.I.D. Program actively recruits students who show motivation and desire to succeed in higher education but may not have shown success on their high school transcripts and/or SAT scores. Minimal admission requirements must be met by the students.

Director: Mr. Sidney Buxton
486 Chandler Street, Worcester, Ma. 01602
(617) 752-7700, Ext. 278.

COLLEGE COUNSELING CENTER

The Counseling Center, staffed by professional personnel, is a multi-purpose center serving the Worcester State College Community. The Center is open Monday through Friday, year-round, from 8:45 a.m. - 5:00 p.m. and is located in the Student Union Building, Room 280. Counselors meet with students on an appointment or walk-in basis, and services include: Individual Counseling for Educational, Career, and Personal needs; Career Testing; Graduate School and Educational Planning; Personal Growth Workshops, and CLEP Testing.

FOREIGN STUDENT ADVISORS OFFICE

Any student who is not a United States citizen and who is not a permanent resident of this country must contact the Foreign Student Advisor in the Office of the Associate Dean of Students. (Room 291 in the Student Center). A student on an F-1 Student Visa must be a full-time student (12 credit hours or more per semester) to maintain his status with the U.S. Immigration authorities.

The purpose of the Foreign Student Advisors Office is to be of service to foreign students for personal counseling, immigration matters, and international student activities.

All foreign students at Worcester State College must be registered with the Foreign Student Office prior to admission and throughout their academic career.

HEALTH INFORMATION CENTER

The Health Information Center, created in 1974 by the Health Education Department, is designed and operated by members of the faculty and students population of Worcester State College. It's primary purpose is to provide accurate updated. non-judgmental information to the people of Worcester State College

on issues of personal, emotional and physical health. This is accomplished through the utilization of trained people staffing the Health Information Center to aid individuals in their concerns, and to disseminate information through various media; i.e. workshops on health issues, pamphlets, films and seminars. The Center has coordinated its activities with other departments and services of the college, in addition to the many programs and agencies located throughout the Worcester Community that cater to the problems associated with alcoholism, drug abuse, nutrition, venereal disease and others.

THE INSTITUTE FOR COMMUNITY SERVICE

Worcester State College, a progressive institution of higher learning, recognizes the need to develop positive relationships with the community. The Institute for Community Service, located in its own facility at 18 Chicopee Street, Worcester, Mass., is designed to fulfill this responsibility. Community as defined by the component centers of the Institute, encompasses the New England Region and New Jersey. The population serviced is nearly 30 million. The Institute operates on a flexible "division of responsibilities" concept that allows for continued development with a minimum of procedural delay. The following nine service components or centers are presently in operation at the Institute. New centers will be added and others discontinued as college or community events warrant.

Adult Education Resource Center Staff working closely with the Bureau of Adult Basic Education, serve as regional leaders in the battle against illiteracy. The Center staff serve as consultants to Adult Basic Education and General Education Development programs, provide pre-service and in-service training for teachers, design new programs and aid in expanding existing ones. The Center has also established a comprehensive library designed to provide all pertinent information on adult education for the region it serves. Search services are also available at minimal cost.

In addition to the nine centers currently in operation, the Institute is seeking to establish centers for Career Education, Middle Eastern Studies, Gerontology, Metric Education, Minority and Women Leadership and Urban Affairs.

Center for Grants, Research and Consortium Activities — Develops for Worcester State College and the community private and public grant funds that will aid any or all departments of the institution. The College is an integral part of the Worcester Consortium for Higher Education. Worcester State, through this Center seeks to operationalize new and better ways of cooperating with its sister colleges in the Worcester area. Faculty and administration endeavors are encouraged as part of the Center's efforts. The staff of the entire Institute strive to enhance a research climate for those who wish to participate.

Center for Study of Constitutional Government was established in 1972 by students at Worcester State College for the purpose of studying and implementing constitutional processes of the municipal, State and Federal systems. The Center, funded by the student Senate from student activity funds, is completely independent and bound to nothing except the desire for good government in a milieu of constitutionalism.

Community Education Development Center is funded in part by a grant from the Charles Stewart Mott Foundation. The Center provides free consultation in any phase of community education and information relevant to the field is disseminated from the Center and/or available for on site use with the entire Commonwealth as a service area. The Center is also part of the Northeast Community Education Consortium, which provides service in the community education to the people of Maine, Vermont, Massachusetts, Rhode Island, Connecticut and New Jersey.

Greater Worcester Women's Center is a human service agency focusing on supportive services for women. The center provides a friendly environment for

women to develop new perspectives and to utilize the services of the staff. The center is also designed to offer short term counseling providing comprehensive information on health, social, family, career, educational, financial and legal services. Services include information about referrals and other local agencies.

New England Regional Life Skills Center was established in 1976 to provide leadership for the development, implementation and dissemination of life skills curricula for New England adults. As such, the Center collects, catalogs and compiles bibliographies of printed material; produces new and innovative print, audio and video material; provides professional training; acts as a liaison with life skills projects across the country; disseminates curricula; and produces and assesses the effectiveness of life skills instruction. Curricula developed in New England will become part of a comprehensive package to be distributed across the country, making it a national as well as regional effort.

New Horizons Program was established to provide short term seminars and workshops on various topics of interest to college and/or community groups. Seminars on Transactional Analysis, Fingerprinting for Police Officers, Motivation Skills, Grantsmanship, a Football Coaches Clinic, Metric Education and many others, indicate the flexibility of this program to meet the needs of professional and citizen groups.

Right to Read Academy Program is part of a national undertaking to develop and improve the reading skills of all citizens and residents so as to enpower them to function effectively in the American society. The Center at the Institute for Community Service was established in 1976 through Federal funding to provide a program of low cost individualized instruction, at convenient locations, with strong reliance on volunteer tutors operating on a flexible schedule. In addition it provides instructional materials and methods designed to meet the needs of the participants and works with community agencies and organizations, which can supplement the literacy effort.

Spanish Cultural Society – SOCIEDAD CULTURAL HISPANA was founded in 1972 to promote the Spanish Culture, to bring together members of the Spanish Community along with people interested in "events" of Spanish origin. Also, to serve the professors, teachers and students of Spanish in the schools and colleges of the area.

Sociedad Cultural Hispana is an all-volunteer, non-funded organization, surviving mostly on proceeds from it's programs, low membership fees, and, above all, the enthusiasm of its organizers, and the response from the public. The Sociedad is composed of students, members of the Latin Community and North Americans.

In the past it has sponsored activities for all tastes, including: Concerts, Lectures, Family Picnics, and Spanish Summer Institutes.

LEARNING RESOURCES CENTER

The Learning Resources Center is comprised of the College's academic library and communications media services. Through the unification of these services the LRC is able to provide students and faculty with a comprehensive range of instructional support services.

Located on the southern edge of the campus, adjacent to the Student Center and Chandler Village, the LRC is distinctive by its round shape. Its three floors contain 120,000 square fee devoted to library materials, classrooms, media distribution and production facilities, faculty and administrative offices, meetings rooms, WSCW - the campus Radio Station, and related functions.

The Learning Resources Center is generally open from 8 a.m. Monday through Friday, closing at 10 p.m. Monday through Thursday, and 4:30 on Friday. The LRC is also normally open Sundays from 1-9 p.m. Changes from these hours are posted on the exterior doors, or may be determined by calling ext. 132 or 135.

Borrowing

Your current Worcester State College I.D. Card is required to borrow materials from the LRC. The length of time any item circulates can be determined by checking at the Circulation Desk in the second floor lobby of the LRC. The date the item is due is stamped on it when you borrow it. A fine of $.05 per day is charged for each day the item is kept beyond the date due. Lost materials are assessed at the current cost of the item plus a handling fee. Should you have items that are overdue, or if you have an outstanding fine account, your borrowing privileges may be suspended.

Communication Services

Occupying a major portion of the first floor of the Learning Resources Center, Communication Services provides a comprehensive program of AV equipment distribution, graphic and printing services, media production services, and rental services. Many of these services are available to students, with some charging of a nominal fee to cover the cost of supplies. Many opportunities are provided to students to work in the LRC through the College's work-study program or volunteer efforts, producing television and audio programs, preparing graphics, photography, and printed materials, completing bibliographic searching, and circulation functions.

Library Services

The LRC maintains a collection of over 140,000 books, 800 current periodicals, non-print materials, microfilm and microfiche, and so on. The book collection, with the single largest amount of floor space in the building, encompasses much of the second and third floors. The second floor contains that portion of the collection classified A-N in the Library of Congress system; a centralized reference collection; a periodical and newspaper section; photocopiers; extensive study and reading areas; Instructional Material Services (Non-print); and the Circulation Department. The third floor contains the L.C. classifications P-Z; two special collections, the Children's Library and the Educational Resources Library; and the College's Computer Center. In addition, the third floor contains the Information Services Department and the AID/LRC Skills Center. This Center is designed as a self-instruction program for improvement of basic skills such as reading, math, science, writing and the like.

Reserve Materials

Faculty members frequently place books, audio tapes and other materials for use in assignments on reserve at the Circulation Desk. These items are normally for use in the LRC, although some do circulate for short periods of time. Circulating reserves are subject to a fine of $.25 per hour the LRC is open, when returned after the time due.

Special Programs

The LRC has many special programs which take place within the building. Visi ble from the ground floor lobby, WSCW maintains its studios and offices. The campus, student operated, radio station serves the dormitories, and various other campus locations with a broad range of programming. The College's Computer Center is located on the third floor of the LRC.

Welcome

You'll find the Learning Resources Center to be an inviting and comfortable place in which to work, study, or just relax. Look around. You'll find a color television studio, a radio station, books, newspapers, and a whole lot more. Welcome.

PLACEMENT - CAREER DEVELOPMENT

The Placement Office assists all Worcester State College Students and Alumni in their search for appropriate employment whether for part-time, summer, initial full-time employment, or career advancement. Registration for Placement Service consists of providing personal data references, and other credentials for inclusion within these files. One may initiate this process by visiting the Placement Office to pick up a pack of materials. Students are encouraged to set up placement files early in their college career. Experience has shown that the immediate availability of a completed placement file may be of utmost importance at a later date.

The Placement Office maintains a listing of available positions in teaching, counseling, administration and related occupations, government agencies, and industries.

The Placement Office arranges campus interviews whenever possible. The dates of these interviews are posted on Campus bulletin board.

Seniors who are majoring or minoring in Education should initiate application for Massachusetts Teacher Certification with the Placement Office. This function is one of the utmost priority and each senior who is certifiable upon graduation should take advantage of the opportunity.

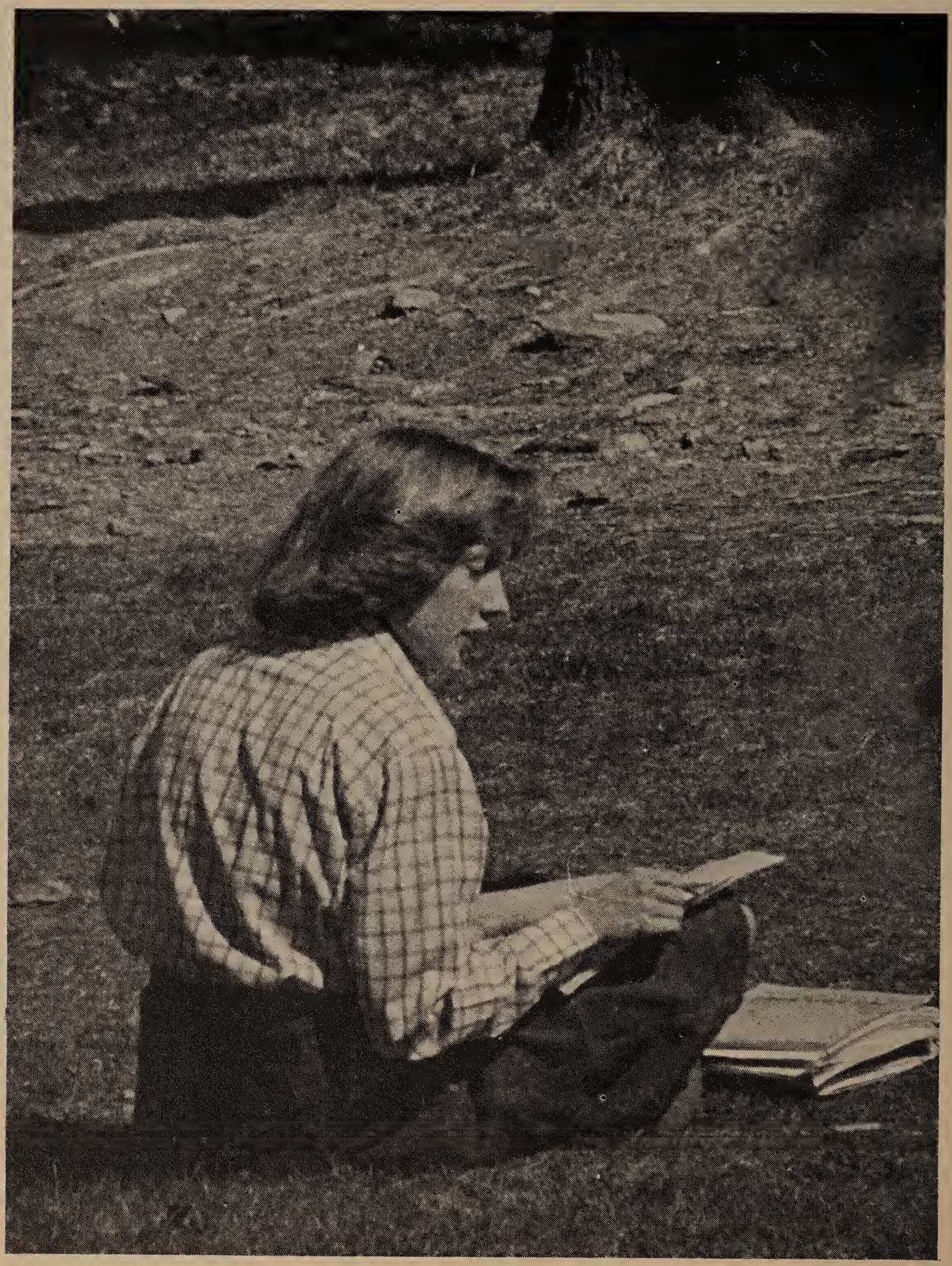
During each semester seminars will be offered covering the following areas:

- Resume preparation
- Interview information
- Job/career search process

WSC CHILD CARE CENTERS

At this time, the WSC Early Childhood Department operates two child centers offering its service to children 3-5 years of age. In order to meet the needs of the children, the Center located at 102 Chicopee Street is basically for three year old children who benefit from the home-like atmosphere it provides. The Center located in the Gym Building (G-22) accommodates the four and five year old child and resembles an open kindergarten class. The main objective of both Centers is to provide an educationally enriched environment to meet the needs of "the whole child". WSC students, faculty and staff have priority in placement. For further information contact Dr. Josephine Politio, Ext. 231, Rm. 101 in the Administration Building.

Academic Policies



ACADEMIC STANDARDS

In order to be considered in good academic standing, students at WSC are expected to comply with the academic policies contained in the college catalog. Categories of jeopardized academic status are as follows:

WARNING – A student will receive academic warning if his academic performance in a class at the end of the first eight weeks of the semester is equivalent to D or failure. (The Registrar will note such deficiencies and mail the warnings.)

PROBATION – If a student fails to meet the requisite quality point average for his class at the completion of each academic year he has to either withdraw from the college or be placed on probation. The same applies to a student who fails to achieve a quality point average of 1.0 at the end of his first semester in college. Probation may not exceed one semester. If at the end of one semester, the probationary student fails to meet the required cumulative quality point average he is withdrawn from the college. It is recommended that, while on probation, a student take no more than 12 credits.

Guidelines for Probation

For the Freshman who fails to achieve 1.0 at the end of the first semester, it is recommended that he be placed on probation if he has achieved 0.70 or higher, or withdraw for one semester with an average of 0.69 or less. The student may appeal this decision to the Admissions Committee. If the freshman student with an average of 0.70 takes 12 credits and receives a grade of C in each of these courses, he will have a 1.50 at the end of his Freshman year.

The following guidelines are for use at the end of the Freshman, Sophomore and Junior years:

FRESHMAN – 1.24 to 1.49 the student shall be placed on probation; 1.24 or less the student shall be withdrawn and may appeal to the Admissions Committee.

SOPHOMORE – 1.60 to 1.74 the student shall be placed on probation; 1.59 or less the student shall be withdrawn and may appeal to the Admissions Committee.

JUNIOR – 1.90 to 1.99 the student shall be placed on probation; 1.89 or less the student shall be withdrawn and may appeal to the Admissions Committee.

These recommended quality point averages are based on the presumption that the student at these recommended levels for probation can achieve good standing by getting two B's and two C's in 12 semester hours.

Withdrawal For Academic Deficiency

A student is withdrawn from WSC who:

1. fails to meet the required cumulative or yearly quality point average as spelled out under academic policies and who falls below the probationary guidelines or,
2. who, after a semester of probation does not meet the cumulative quality point average demanded by his previous year in class.

When a student is academically withdrawn from WSC, the Coordinator of Academic Advising will designate the fields in which preparatory work must be completed in order for him to be readmitted.

Readmission

A student who has been withdrawn from WSC for academic deficiences may qualify for readmission by complying with the following plan:

1. he may complete the appropriate number of semester hours at another approved institution of higher education (with the advice of the Coordinator of Academic Advising) and earn grades necessary to raise his cumulative quality point average to that standard or level of performance required at the time he was withdrawn from the college; or
2. failing to meet the above readmission criterion, a person may apply to the Admissions Committee for readmission. The committee may then request any supportive date it needs to make it's decision.

ATTENDANCE

Good attendance is expected of all students at regularly scheduled classes. Although the Administration does not exercise control of attendance, responsibility for all tests and other required work rests entirely with the student.

No instructor is to employ the use of attendance or unscheduled tests as the primary source of marking or evaluating a student's performance. Every instructor is expected to announce the requirements of the course at the start of each semester. Each instructor has the option to give or refuse to give make-up examinations or quizzes on announced examinations or quizzes.

Announced examinations or quizzes are those which a professor does announce with a specific date one week in advance. Students having reasons for missing announced examinations or quizzes will be given consideration by the instructor.

Every instructor will have two options concerning the giving of make-up exams for unscheduled examinations (unscheduled examinations being those tests which are given without the week's prior notice). The instructor may give a make-up examination, or if he feels it is inconvenient to give a special examination, has the alternative of not counting the examination missed by the student in computing the final average.

Attendance need not be taken by the Instructor.

GRADING AND QUALITY POINT SYSTEM

The marking system in effect at WSC consists of the following:

1. Letter grades A, A-, B+, B, B-, C+, C, C-, D+, D, E, Withdraw, Withdraw Pass, Withdraw Fail, Pass, and Fail are used.
2. Each student's marks are evaluated each semester on a quality point basis. A is equivalent to 4.0, A- to 3.7, B+ to 3.3, B to 3.0, B– to 2.7, C+ to 2.3, C to 2.0, C- to 1.7, D+ to 1.2, D to 1.0, and E to 0.0, W, WP, WF, P, F, and Inc. are not included in the computation of the quality point average.

The number of quality points a student receives in a course is determined by multiplying the total number of semester hours by the corresponding number of quality points. For example, should the student receive an "A" in English which is worth 4 quality points, he multiplies that by 3 for a total of 12 quality points.

The assignment of a letter grade, with or without the use of pluses or minuses, is a matter of the individual faculty member's discretion.

Freshmen with a quality point average of less than 1.0 at the end of their first semester may be dropped from the college rolls. To proceed from Freshman to Sophomore year, the student must achieve a quality point average of 1.50. To proceed from the Sophomore year to the Junior year, the student must have a quality point average of 1.75 for his Sophomore year or a 1.75 cumulative average. To proceed from the Junior to Senior year, the student must have a quality point average of 2.0 for his Junior year or a cumulative average of 2.0.

Students wishing to take courses outside the college's regular undergraduate program must receive the prior written approval of their faculty advisor.

Incomplete (INC): An incomplete grade is an extension of time granted by the individual faculty member to a student to complete the requirements of a course in which he has already completed 80% of the work, but has been unable to finish the course requirements because of valid reasons.

Plans for the removal of the incomplete should be clearly understood. All incompletes must be resolved within eight weeks after the beginning of the next semester. After this time, the incomplete will automatically become a grade of E, and is so recorded on the student's permanent record.

SEMESTER HONORS: Students who take at least 12 graded credits, i.e., non-pass/fail, and achieve a semester a semester QPA of 3.30.

GRADUATION WITH HONORS: Students graduating with honors must attain the following averages for the four years: cum

laude (3.3 - 3.59), magna cum laude (3.6 - 3.79), summa cum laude (3.8).

PASS/FAIL POLICY

A pass-fail system has been established wherein students will be able to select two courses and physical education per semester on a pass-fail basis.

Pass-fail grading shall not apply to those courses used to acquire the thirty (30) hours in the student's major field.

Pass-fail grading shall not apply to those courses used to acquire the eighteen (18) hours in the student's minor field.

These courses must be outside the elementary education major's field of concentration until he has acquired fifteen (15) hours in this area.

Students must inform the Registrar one month prior to the last scheduled day of class if they wish to take a course Pass-fail. The instructor may grade the student A, A-, B+, B, B-, C+, C, C-, D+, D, or E and the Reigstrar will convert the letter grade to a "P" or "F". If a student decides to change his choice of the Pass-fail course then he must notify the Registrar within one month prior to the last scheduled class.

WITHDRAWAL POLICY

Withdrawal from the College*

1. PERMANENT – W, WP, WF are the grades used at the time of withdrawal. No computation in quality point averages will be recorded on the student's permanent record. Should a person decide to return to WSC after having permanently withdrawn, the individual would have to file for admittance as a new student.
2. LEAVE OF ABSENCE – To preserve his position in the college, the student requesting a leave of absence must return on an agreed upon date. An extension of no more than one semester may be granted. Failure to return on the agreed upon date will necessitate filing for admission as a new student if the student desires to return. W, WP, WF are the grades used at the time of withdrawal. No computation in quality point averages will be recorded on the student's permanent record. Inquiries regarding this procedure may be made at the Dean of Students Office.
3. EXTENUATING CIRCUMSTANCES – Under certain circumstances and at the discretion of the Dean of Students, a student may be granted a temporary leave of absence.

Changing and Withdrawing from Individual Courses*

1. Students may change courses up to two (2) weeks after the first day of classes. The required forms are available at the Registrar's Office.. The procedure to change, add or drop a course is as follows:

a) First obtain the signature of the Professor of the section the student wishes to add;

b) Obtain the signature of the Professor of the section the student wishes to drop;

c) Return the form to the Registrar's Office.

2. Students may withdraw from individual courses prior to four (4) weeks before the date of the last class. Students withdrawing from a course before the eight (8) week "D-Warnings" are issued shall receive a W, WP, or WF on their record. Students will receive no credit for courses which they have withdrawn, and in no case shall a W, WP, WF be used in computing a student's quality point average. To withdraw from an individual course, a student follows the procedure noted on the Course Withdrawal From (Registrar's Office). In addition the student, withdrawing from a course should also consult with his Advisor.
3. It is also possible for students to be granted a "Withdrawal due to Extenuating Circumstances" from an individual course at any time. Such permission is granted by the Dean of Students.
4. Students withdrawing from all of their scheduled courses shall be considered as having withdrawn from the college. (See above section: Withdrawal from the College).

All withdrawals shall be filed with the Dean of Students; student Advisors shall be informed and consulted in each case; students who fail to go through established procedures will be considered as still enrolled in their courses and shall receive a grade based upon the course requirements.

CHANGE IN MAJOR, MINOR, SPECIALIZATION, DEGREE, OR YEAR

Students may change their major, minor, specialization year or degree with the advice of their academic advisor and prospective Department Chairman at any time other than during the 2 weeks prior to or during Reigstration period.

Any student who wishes to change his major must first consult with the Coordinator of Academic Advising from whom appropriate forms may be obtained. The student must then obtain the signature from his/her major advisor at the time of the change and also the Department Chairman of the student's new program of studies.

WAIVER FROM CURRICULAR REQUIREMENTS

Students and faculty should note that a waiver from a curricular requirement (e.g. physical education activity for veterans) does not automatically confer an equivalent amount or credits or lower the credit hour requirement for graduation. See also Credit by Examination under General Information.

GUIDELINES FOR INDEPENDENT STUDY

The following statements are recommended to serve as college-side guidelines and requirements for all courses designated Independent Study at Worcester State College.

1. It is generally believed that not all students may profit from Independent Study; therefore, it is suggested that this course be recommended primarily to students of demonstrated interest and ability in the area of the Independent Study.
2. With this in mind, it is recommended that any student desiring to conduct an inquiry or project in this field of interest by Independent Study must select an instructor and with his advice prepare a written contract containing the basic idea and direction of the study, which should be submitted to the departmental curriculum committee within the first three weeks of the semester.
3. The departmental curriculum committee together with the instructor will determine whether or not the student will be allowed to conduct this study after evaluating its merits.
4. Based on the instructor's recommendation, the departmental curriculum committee will also determine the number of credits to be given for the study. One to four hours of credit may be granted for one semester of Independent Study.
5. A copy of the written contract must be filed with the Department Chairman, the major advisor and the instructor.
6. A written report of the accomplishments must be made during the semester of study.
7. No undersubscribed courses can be given as Independent Study.
8. An independent Study requires a varying degree of supervision by the instructor. Therefore, it should be related to the overall teaching load of the instructor involved. Contact hour credit may be granted for one semester of Independent or may be granted for one semester of Independent or may not be given.
9. The student's transcript should indicate the subject of the student's Independent Study Project; e.g., SE 510 Independent Study in Secondary Education - A mini course on the American Revolution.

GUIDELINE FOR INTERNSHIPS

INTERNSHIP: A supervised practical experience, on a regular basis, for an extended period of time for advanced students through an academic department.

SCREENING OF PROSPECTIVE INTERNS: After pre-registration for an internship, the department offering the internship will screen the applicants in order to select those best suited for the internships available.

CREDITS FOR THE INTERNSHIPS:
Full time equivalency - a student interning full time (5 full days per week) should earn an equivalent number of credits as a student carrying a full course load; e.g., 15 - 18 credits; Part time equivalency - a student interning on a part time basis should earn

at least one academic credit for every thirty hours of internship; the advisor with the approval of the department has the responsibility of assigning the credit value to the specific internship; a description of the specific internships (location, responsibilities, duration) and credit assigned should be filed by the advisor with the Department Chairman and Director of Professional Experiences.

SUPERVISION OF INTERNS: Supervision is to be provided by the department offering the intership. The plan for agency and college supervision, after consultation with the Director of Professional Experiences should be filed in that office.

EVALUATION: It should be the responsibility of the intern's college supervisor to evaluate and grade the intern's performance; attendance is mandatory; a student may be removed from an internship if in the judgment of the advisor, the chairman of the Department, and the Director of Professional Experience it is in the best interests of all concerned. (Student and college.)

The director of Professional Experiences shall have the responsibility of coordinating all internships, facilitating placements, supervision, and evaluation.

NOTE: *See Advisor's Handbook for sample forms.*

CLASS STANDING

The following guidelines shall be used for determining class standing. Note that since the college no longer discourages part time students, the main purpose of this classification is to determine registration times and to see that students receive appropriate notices concerning class events.

First Semester

Freshman: 1-12 cr. hours
Sophomore: 24 - 40
Junior: 54 - 69
Senior: 84 - 102

Second Semester

12 - 24 cr. hours
40 - 54
69 - 84
102 -

For example: A student entering in September must have completed 24 credit hours to register with the Sophomore class. A student entering in January would have to have completed 70 credits to register as a Junior, (to have a chance at the same time as regular Juniors).

Students registering into a class will have the responsibilities of that class concerning QPA and other indices of academic standing, e.i., freshman must achieve a 1.5 average; sophomores, a 1.75 average, etc.

OFF CAMPUS COURSES

If a student wishes to take courses for credit at another institution, including WSC Continuing Studies, he must complete a form (available in the Academic Advising Center)requesting to do so. This permission is granted by the faculty advisor. This is placed on file at the Office of the Registrar and guarantees that WSC will accept the credits obtained in this way (to improve a low grade or make-up a failed course, for example). Courses taken via the Consortium are exempt from this procedure.

STUDENT COURSE LOAD

Students and advisors are reminded that to maintain full-time student status, the student must be enrolled for at least 12 semester hours. While it is not necessary that every student complete his degree within four years, most want to do so. They are thus well advised to carry 15-16 hours each semester in order to accumulate the 128 credit hours required for graduation.

MAXIMUM: special permission is required for loads over 18.5 credit hours.

NOTE: When a student seeks permission to carry an overload, it must be approved by his advisor. Forms have been distributed to each faculty advisor for this purpose. Additional forms may be obtained at the Academic Advising Center, A210. These forms are sent directly to the Registrar's Office where they are filed in the student's folder.

Academic Programs

BACHELOR OF ARTS
BACHELOR OF SCIENCE

GENERAL REQUIREMENTS

Credit Hours

Every candidate for the Bachelor of Arts or Bachelor of Science degree must complete 128 semester hours of credit before graduation.

Residence

The usual period of residence and study required of a student who enters as a Freshman is four years. Students must successfully complete one year at WSC (minimum of 30 credit hours) in order to graduate from WSC. Transfer credit within the major must be approved by the major department. The major department will determine course and credit requirements and students must meet the degree requirements of the class with which they plan to graduate.

Graduation Grade

A grade point average of 2.0 or better must be attained in courses in the major field. An average of 2.0 must be attained for all courses to quality for graduation.

Course Load

MINIMUM — A full time student is required to register for courses totaling a minimum of 12 hours per semester.

MAXIMUM — A student may elect up to 19.0 semester hours without special permission. Official permission is required from the student's Advisor to elect more than 19.0 semester hours per semester.

CURRICULAR REQUIREMENTS

The particular courses in which credits may be earned are selected by the student and his Advisor. Courses should be selected to meet the student's needs within a general framework that is designed to insure a certain degree of breadth and depth in his intellectual development. The student will have the counsel of his faculty Advisor during and after the pre-registration period and throughout his college career. The required course of study combines General Foundation, Distribution, Major, and optional Minor program, and Electives Courses.

General Foundation

The following courses are to be taken by all students beginning in the Freshman year and continuing until the requirements are completed (Section 3 excepted):

1. ENGLISH COMPOSITION — Six credits is required of all Freshman unless exemption is granted by the Department of English.
2. PHYSICAL EDUCATION — Each student is required to take either three one-credit activity courses or one three-credit Health or Physical Education course. Veterans are exempt.
3. FEDERAL AND STATE CONSTITUTIONS — Prior to graduation each student shall have completed a course in which the United State and Commonwealth of Massachusetts constitutions are studies (Chapter 73, Section 2A-General Laws, Commonwealth of Massachusetts as amended).

Distribution

The purpose of the requirements in distribution is to provide the student with a general knowledge of the content and methods of the various fields included in a liberal education. Students may elect courses to meet these requirements in any year of the undergraduate program. The requirements must be fulfilled by a minimum of six credit hours in each of the four groups listed below. Courses taken to meet General Foundation requirements do not apply. (Courses included in the student's major or minor, however, may be used to meet distribution requirements in the groups to which they apply.

GROUP 1. Humanities

Literature (read either in English or other languages)
Philosophy
History
Foreign Languages
Media

GROUP II. Social Sciences

Economics
Education
Geography
Political Science
Psychology
Sociology

GROUP III

Art
Theatre
Music

GROUP IV. Natural Sciences and Mathematics

Biology
Chemistry
Geology & Physical Geography
Mathematics
Physics
Natural Science

Major-Minor Program

The student is given the opportunity to study one subject, the major, and a second optional subject, the minor, in an increasingly effective and scholarly way. The object of this concentration requirement is to provide the student with a project of integrated study, leading him to the satisfaction of having made progress in a well-developed field of learning. A double major is also allowed.

The student chooses his major field of intellectual interest in one of the academic disciplines offered. The chairman of that department will assign a faculty member to assist and advise the student in designing a comprehensive program of studies. The program must include:

1. At least 30 credit hours in the major field. The major may not exceed 48 hours in a single department except by permission of that department. The major shall be outlined and certified by the major departments.
2. Should a student select to have a minor, a minimum of 18 credit hours in a minor subject area is required. Approval by the major advisor is also required. The minor may not exceed 24 credit hours except by official permission.

Elective Courses

Other courses to complete the 128 hours for graduation may be selected without restriction. The Student, however, should be guided in his choice by the purpose of promoting breadth as well as depth in his intellectual development. The purpose of elevtice courses is to permit the further pursuit of advanced work and to encourage exploration in diverse fields of knowledge.

BACHELOR OF SCIENCE IN EDUCATION

GENERAL REQUIREMENTS

Credit Hours

Every Bachelor of Science degree in Education (Elementary) candidate must earn 128 semester hours of credit before graduation.

Residence

Normally, at least 30 credit hours of the total 128 must be taken at WSC. The normal period of residence and study required of a student who enters as a Freshman is four years. Credits for students teaching must be earned at this college.

Graduation Grade

A quality point average of 2.3 or better must be attained in Education courses, and an overall average of 2.0 must be earned in order to graduate.

Course Load

MINIMUM — A full-time student is required to register for courses totaling a minimum of 12 semester hours of credit per semester.
MAXIMUM — A student may take up to 19.0 semester hours of credit per semester

without special permission. Beyond this, official permission is required from the Chairman of the Department or Academic Advisor.

CURRICULAR REQUIREMENTS

General Foundation Requirements

The following courses are to be taken by all students.

1. ENGLISH COMPOSITION – six credits is required of all students unless exemption is granted by the Department of English or credit is received from College Level Examination Program (CLEP).
2. PHYSICAL EDUCATION – Each student is required to take either three one-credit activity courses or one three-credit Health or Physical Education course. Veterans are exempt.
3. All students must take one of the following courses in history or political science prior to graduation: U.S. History I; U.S. History II; American Government; U.S. Constitutional History or Constitutions; U.S. & Massachusetts.

BACCALAUREATE DISTRIBUTION REQUIREMENTS

Each student is required to complete 32 semester hours in the following disciplines:

English/Literature
(6 semester hours)
Speech
(2 semester hours)
Psychology
(6 semester hours)
Music/Art
(3 semester hours)
Mathematics
(3 semester hours)
Laboratory Sciences
(6 semester hours)
Social Science/Philosophy
(6 semester hours)

PROFESSIONAL EDUCATION REQUIREMENTS

Students preparing to teach in the elementary schoola re required to complete the professional sequence listed in the four-year curriculum plan which is found in sections under Departments, Programs and Course Descriptions. A minimum of 39 semester hours must be earned in this area. Students are not to exceed 60 semester hours in Education.

ACADEMIC MINOR

Every Elementary Education major must select a minimum of elective courses totaling 18 semester hours in an academic field in addition to those listed above in the Baccalaureate Distribution Requirements.

SPECIALIZED PROFESSIONAL EDUCATION

Students must take 12 semester hours in specialized fields which are described in the sections under Departments, Programs, and course descriptions.

MINIMAL CURRICULAR REQUIREMENTS

General Foundations
(8 semester hours)
Professional Educational Courses
(39 semester hours)
General Distribution Electives
(32 semester hours)
Academic Minor
(18 semester hours)
Specialized Professional Education
(12 semester hours)
Undesigned Electives
(19 semester hours)

TOTAL: 128 semester hours

BACCALAUREATE DEGREE ELECTION – B.A./B.S.

Students may receive either a Bachelor of Arts or Bachelor of Science while majoring in any subject, with the exception of Elementary Education.

Each department will specify the requirements in its major and ancillary fields. Departments are free to structure requirements to meet either or both degree programs provided such requirements are consistant with college-wide requirements for graduation.

Determination of Degree

The two areas of concentration under the baccalaureate degree programs are: Humanities and Sciences. The subject areas normally associated with the two designations are:

HUMANITIES

Art
Drama
English
Foreign Languages
History
Media
Music
Philosophy

SCIENCES

Biology
Chemistry
Computer Sciences
Economics
Education
Geography
Management
Mathematics
Natural Science
Nursing
Physical Education
Political Science
Psychology

Sociology
Communication Disorders
Urban Studies

Designation of degree shall be made by totaling elective credits* in the Humanities and Sciences concentrations. If a majority of elective credits were awarded in the Humanities, the student will be granted a Bachelor of Arts Degree; if a majority of the elective credits were awarded in the Sciences, the student will be granted a Bachelor of Science Degree. (Effective June, 1972)

*ELECTIVE CREDITS are defined as any credits above those required for completion of major (major and ancillary courses), and as listed under General Foundations.

PROGRAMS OF STUDY

WORCESTER STATE COLLEGE OFFERS:

BACHELOR OF ARTS AND BACHELOR OF SCIENCE DEGREES

Major Programs Include the Following:

Biology

Concentrations in:

- Pre-medicine
- Pre-veterinary Medicine
- Pre-dentistry
- Biological Technology
- Environmental Technology
- Nuclear Medicine Technology

Chemistry

Concentration in:

- Pre-medical
- Pre-dental
- Nuclear Medicine Technology

Communication Disorders

Early Childhood Education

Economics

Elementary Education

Specialized Professional Education in:

Communication Disorders
Early Childhood Education
Elementary Education
Health Education
Media/School Library Science
Management
Physical Education
Reading
Special Needs
Urban Education

English

Concentrations in:

- Writing Communications

French

Geography

Concentrations in:

- Urban Planning Internship
- Cartographic Techniques

Health Education

History

Concentrations in:

- Pre-Law
- American Studies

Management

Concentrations in:

- Accounting
- Business Administration
- Health Administration
- Government or Public Administration

Media

Concentrations in:

- Educational Media Specialist
- Library Associate
- Communication Technology
- Theatre Arts Specialists

Natural Science

Concentrations in:

- Physical Science
- Life Science
- Earth & Space Science
- Environmental Science
- Technologist Training

NOTE: for purposes of explanation, it should be noted that a concentration within a major refers to a particular program of studies developed by the student and his or her adivsor with a definite direction or emphasis in mind.

Nursing
(Upper Division – For RN's only)

Physics
Nuclear Medicine Technology

Psychology
Concentrations in:
- Educational & School Psychology
- Social Service
- Clinical & Counseling Psychology
- Management & Industrial Psychology

Sociology

Spanish
Concentration in:
- Language for business & Commerce
- English as a Second Language*

Urban Studies
Concentrations in:
- Government and Public Services
- Health & Human Services
- Community Planning

MINOR PROGRAMS INCLUDE THE FOLLOWING:

Art
Biology
Chemistry
Coaching
Communication Fidotfrtd
Computer Science
Drama
Economics
English
French
Geography
German
Health Education
History
Library Science
Management
Mathematics
Media
Middle East Studies
Music
Natural Science
Philosophy
Physical Education
Physics
Political Science
Psychology
Sociology
Secondary Education
Spanish
Special Needs
Sports Medicine
Theatre Urban Studies

*In Planning Stages

SPECIAL PROGRAMS INCLUDE THE FOLLOWING:

Community Education Development Center
Cross-Registration - Consortium
Consortium Health Studies Option
Foreign Exchange and Study Abroad
Marine Sciences
Cooperative Nursing Education with Diploma Programs
Reserve Office Training Corps

THE ACADEMIC ADVISING PROGRAM

Although the student is free to choose his own program of studies and will make the necessary decisions regarding all academic matters, WSC students are urged to work cooperatively and in a spirit of mutual understanding with their Faculty Advisor. It is the Advisor's responsibility to assist and advise the student, working with and for the best possible job of meeting the college's requirements and the student's own best interest.

The Academic Advising Program is an integral part of the educational process at WSC. Students are assigned Advisors by the Coordinator of Academic Advising in consultation with each Department. Whenever possible, the assignment is based upon a mutual interest of the student and Faculty member. If it is desirable for a student to change his Advisor at any time, appropriate action may be initiated through the Coordinator of Academic Advising by either the student or the Advisor.

The Advisor will inform each of his advisees of the available academic alternatives and will make suggestions, when asked, for particular study programs. The faculty Advisor should be consulted frequently during the academic year as well

as at pre-registration and registration periods. If the advising program is to be successful, students should feel free to consult their Advisor whenever they wish. An appointment is recommended and should the Advisor not be in his office, a note can be left for him/her in the mailroom on the first floor of the Administration Building.

The Centralized Advising Center

Students who do not choose a major area of study intil the end of their freshman or sophomore year are unlikely to have an Advisor. For these students as well as students unable to contact their faculty Advisors, a centralized Advising Center was established and is located in the Administration Building, Rm. A210. The Center is staffed throughout the week between 9:30 A.M. and 4:30 P.M. Students seeking immediate information are urged to visit this Center. Advising for evening students is also provided through the Continuing Ed. Division, (Tel. 752-7700, ext.253).

COLLEGE ACADEMIC PROGRAM SHARING

The College Academic Program Sharing is an example of WSC cooperation with other colleges - in this case, with the ten other institutions that make up the Massachusetts State College System, CAPS means that a student can take up to 30 semester hours of credit at another State college without going through formal registration procedures. Credits earned are automatically transferred to WSC, and the student pays no additional tuition or other fees. This could mean for example, that a WSC student might spend a year at Boston State, Framingham, the Massachusetts College of Art — or any of the others — in order to take a special program. The State Colleges are not identical. Each has its areas of specialization and the CAPS program enables one to take advantage of this diversity. For further information contact: Registrar at WSC.

CONSORTIUM

The Worcester Consortium for Higher Education is an association of the ten Worcester colleges. The members are:
Anna Maria College
Assumption College
Becker Junior College
Central New England College
Clark University
College of the Holy Cross
Quinsigamond Community College
University of Mass. Medical School
Worcester Polytechnic Institute
Worcester State College

The associate members are:
American Antiquarian Society
The Craft Center
International Center of Worcester
Old Sturbridge Village
Worcester Art Museum
Worcester County Horticultural Society
Worcester Foundation for Experimental Biology
Worcester Science Center
Radio WICN
Worcester Historical Society

The purpose of the Consortium is to provide interaction and sharing among students and faculty of member institutions. The most popular activity is cross registration.

No Charge Cross Registration

As a full time, day student at WSC, you may take courses at any other Consortium college "free." A reasonable set of regulations governs cross registration. The Consortium Shuttle Bus provides free transportation to most campuses. The No Charge Plan does not include evening colleges.

Regulations

Procedure For Cross Registration

Other Consortium Activities

Worcester Area Cooperating Libraries
Consortium Health Studies Option
Educational Opportunity Centers, 819 Main Street, Worcester
Writer-Playwright-Poet in Residence
Music in the Consortium
Art in the Consortium
Religious Studies in the Consortium

CREDIT BY EXAMINATION

WSC provides the opportunity to students to challenge discipline areas for advanced standing (credit). The following list of Credit by Examination tests are available.

These standardized examinations offered on campus through Educational Testing Services offer college credit in two categories: General Exams which include English, Humanities, Mathematics, Social Sciences and/or Natural Sciences; and Subject content areas. Further information and applications are available through the Counseling Center, in the Student Union Building, Room 280.

ADVANCED PLACEMENT PROGRAMS: Administered by CEEB, these tests may be taken by an incoming Freshman for potential credit, they are usually administered together with the SAT.

DEPARTMENTAL CHALLENGE EXAMINATION: Many departments at WSC offer a student the opportunity to request and take department made examination for credit. Contact the appropriate Department Chairman.

NATIONAL LEAGUE OF NURSING EXAMINATIONS (NLN): Administered to potential candidates for the Upper Division Major in Nursing. The examination also may be taken for advanced study. Contact Dr. Lillian Goodman for further information.

AMERICAN CHEMICAL SOCIETY: Students may challenge Chemistry for the Allied Health Professions by contacting the Chemistry Department, New York Board of Regents: In some cases, credit can be awarded for these exams.

THE DIVISION OF CONTINUING EDUCATION

The Division of Continuing Education offers persons who are employed or otherwise engaged during the day, an opportunity to pursue their college education on a part-time basis without interfering with their normal activities. Adults wishing to enroll in evening classes may enter as degree students, non-degree students or as auditors. Opportunities for evening study at the College fall into three general categories (1) undergraduate and graduate degree programs; (2) work in credit courses without reference to a degree; and (3) enrollment in credit courses as an auditor.

With few exceptions, evening courses are the same as those offered during the day in context, quality, and quantity of work required. Degree students enrolling in evening classes meet the same academic requirements in course prerequisites and on completion of degree programs receive the same degree as day students. Because of limited course offerings in some academic areas, it may be necessary for evening students to enroll in day classes to complete part of their degree requirements.

The admission requirements for "adult degree" students are the same as those for day students. Mature persons who have not earned a high school diploma may be admitted to the College by submitting satisfactory scores on the General Education Development (GED) test.

Adult students may enroll for evening credit courses which apply toward the degrees of Bachelor of Arts or Bachelor of Science in the following areas:

Undergraduate Degrees

Elementary Education
English
Geography
History
Management
Mathematics
Natural Science
Psychology
Sociology
Spanish
Urban Studies

Minors

Computer Science
Economics
English
Geography
Health Education
History
Mathematics
Media
Music

Natural Science
Philosophy
Political Science
Spanish
Theater Arts
Urban Studies

The credit courses are taught by full-time faculty members or by part-time faculty who are well qualified in their field. Undergraduate credit may be received for lower series graduate level courses (8-000 level courses), but only with permission of the faculty advisor.

Credit courses normally meet one evening of each week for approximately three (3) hours. Part-time evening students are advised to take no more than 2 - 4 courses per semester if they are elsewhere occupied on a full-time basis.

If further information concerning evening courses is desired, individuals may contact the Division of Graduate Education and Special Programs located in the Science Building in Room S112 or call 752-7700, extension 273, anytime between 9:00 am and 9:30 pm Monday - Thursday and 9:00 am and 4:00 pm on Fridays.

Division of Graduate Education and Special Programs

Worcester State College offers an extensive graduate program leading to a Master's in Education degree with a variety of concentrations offered. Worcester State College also offers a Master of Arts as well as a Master of Science degree in Biology.

Pending the approval of the Board of Higher Education are the following graduate degrees: Master of Arts in History, Master of Arts in Chemistry, Master of Arts in English, Master of Arts in Hispanic Studies, Master of Arts in Mathematics.

Worcester State College also offers the Certificate of Advanced Graduate Study for post-masters students.

Courses are also available through the Office of Graduate Education and Special Programs for enrichment as well as for certification purposes.

It is possible to pursue an undergraduate degree on a part-time or full-time basis at the Evening School.

Workshops and Institutes are available through the Office of Graduate and Special Programs.

For further information regarding the Division of Graduate Education and Special Programs, please contact Dr. William O'Neil, Dean of Graduate Education and Special Programs, Science Building, Room 112, telephone 752-7700, extension 253, 373 or 388.

FOREIGN EXCHANGE AND CENTER FOR INTERNATIONAL EDUCATION

Through the Massachusetts State College System's Center for International Education located at the Massachusetts Maritime Academy at Buzzards Bay, students at WSC may avail themselves of the opportunity to engage in overseas exchange studies including student teaching for academic credit. Students seeking information should contact the Director of Professional Experiences (A210), the Dean of Students Office, or Professor Jennie Celona in the Language Department.

INTERNSHIPS AND PROFESSIONAL EXPERIENCES

At Worcester State College an internship is a form of experiential learning that can be described as field experience education providing a student the opportunity to put theory into action. An internship may be taken for academic credit or non-credit. If credit is to be granted, the internship is to be *monitored* and *evaluated* by the appropriate college department. The department can refuse to grant credit if the terms of the internship contract are not fulfilled. The internship can be structured according to one of many models:

1. PROFESSIONAL TRAINING — A student serves as an apprentice carrying out assigned tasks under the supervision of a professional in the field of education, nursing, communication disorders, school libraries, or social work in order to gain the skills and use the knowledge requisite to the profession.

2. WORK EXPERIENCE – Under the sponsorship of a faculty member, a student integrates classroom experience and practical work experience in business, governmental, or service-type work situations in the community.
3. FIELD RESEARCH – A student undertakes an independent or group project in business, government or community situation applying the principles and concepts of an academic discipline under the supervision of a faculty member.
4. CAREER EXPLORATION – A student is assigned to a supervised placement in service, develop employment related skills and to analyze career possibilities of that placement.
5. SOCIAL POLITICAL ACTION – A student is assigned to a placement under faculty sponsorship which gives him the opportunity to be directly engaged in working for social change either through community organizing, action-research projects, or work with organizations seeking to bring about societal change.
6. SERVICE LEARNING – Under the supervision of a faculty sponsor, a student is given the opportunity to integrate the accomplishment if a task which meets human needs with conscious educational growth.

A student should know what he/she wants from the internships so the experience can be structured to meet his/her goals.

Each student must be actively involved, in the development of the internship placement; i.e., develop a resume, interview for placements, expedite any correspondence that may be necessary. It is helpful if the student contacts the faculty sponsor the semester prior to the internship.

The internship contract sets out the responsibilities of each party. This allows each participant to know what is going to happen and his own specific role in the educational field experience. The purpose is to develop an articulation process by which components, needs and obligations of the specific field experience education are set out. Through this process, each program is individualized to accommodate the personal goals of the student, the academic goals of department and the needs of the off-campus organization.

COOPERATIVE EDUCATION

The Massachusetts State College System has formed a partnership with selected Federal Agencies to provide a Cooperative Education Program for a limited number of State College Students interested in careers with the Federal Government. A Worcester State College student participating in this program may be eligible to enter a career position in a Federal Agency without taking the competitive examination. Interested students should be United States citizens, maintain a 2.5 Q.P.A., be eligible for Federal employment at the G-5 level upon graduation in order to be considered for this program. The Worcester State College program involves two full time paid work experiences in a Federal Agency separated by an on campus full time academic semester. Two students will be assigned to one agency position for alternating periods of work and study thereby providing the agency with 52 week coverage for the position. A basic plan would be:

Period	Student A	Student B
July - Dec.	Agency	Campus
Jan. - June	Campus	Agency
July - Dec.	Agency	Campus
Jan. - May	Campus	Agency
	Graduation	Graduation

Additional information concerning the Cooperative Education Program may be obtained from the Director of Professional Experiences in A210.

MARINE SCIENCES PROGRAM

The Massachusetts Maritime Academy, in cooperation with other Massachusetts State Colleges and the Cape Cod Community College, offers a series of college-level, project-oriented courses in the Marine Sciences at its Buzzard Bay water site campus. This approach takes advantage of the diverse capabilities and interests of the several college facilities in seeking to complement related courses at participating colleges. Courses may be credited toward programs in biology, geology, chemistry, physics, geography,

environmental sciences and education at participating colleges. The oldest, continuously operating Maritime Academy in the United States offers the newest buildings and equipment for marine science programs, including classrooms, "wet" and conventional lab, air-conditioned library, specialized marine equipment, small craft, vehicles, dormitories, dining hall and extensive recreational facilities.

For further information regarding admission and expenses, please contact Dr. Paul Holle, Worcester State College, Worcester, Massachusetts 01602.

PRE-MEDICAL/PRE-DENTAL PROGRAM

Worcester State College offers a program for students who are interested in applying to a Medical or Dental School. These schools prefer the collegiate applicant who has excelled in his field of interest, whether it be in the sciences or in the humanities, and who possesses a sound scientific foundation. Whatever his major, it is expected that he will have acquired a broad, liberal education.

Nearly all medical and dental schools require one year of each of the following with laboratory; General Chemistry, Organic Chemistry, Biology, and Physics. In addition, many schools require two years of a modern foreign language, one year of English (including composition) and mathematics through calculus. It is advisable that these courses be completed by the end of the Junior year in order that they may be properly evaluated by either a medical or dental school. In addition to these basic courses, a number of medical schools require one or more additional courses, such as, Comparative Vertebrate Anatomy, Embryology, Genetics, Physical Chemistry and Quantitative Analysis.

A student who is interested in medicine, dentistry, veterinary medicine, optometry, podiatry, or osteopathy should consult both his major Advisor and a member of the Pre-Medical and Pre-Dental Advisory Committee. Regardless of his major, the student would be well-advised to elect General Chemistry I and II, and Biology I and II during his Freshman year. The WSC Pre-Medical and Pre-Dental Advisory Committee is composed of the following members: Dr. Carol Chauvin, Department of Biology; Dr. Alan Cooper, Department of Chemistry; Dr. Marlin Kreider, Department of Biology; Dr. Estelle Zoll, Department of Chemistry.

RESERVE OFFICER TRAINING CORPS

Air Force

Although WSC does not have an ROTC Program on campus, it does offer, with the cooperation of the College of Holy Cross, the two-year Air Force Reserve Officer's Training (ROTC) Program during the Junior and Senior years. This not only means a chance to earn a commission; there are important financial benefits as well. All students enrolled in the last two years of the four-year program receive a tax-free stipend of $2,000. In addition, WSC students can apply for Air Force scholarships to cover all tuition and textbook costs.

The program consists of one three-hour course each semester, one Corps Training period per week and attendance at a six-week training camp prior to the Junior year.

The mission of AFROTC is to commission career oriented officers to meet specific Air Force requirements through on-campus college programs. The Air Force objective is to place on active duty lieutenants who demonstrate dedication to their assignments, willing acceptance of responsibility, critical and creative thinking, and the ability to speak and write effectively.

The basic qualifications for enrollment in the AFROTC program require a student to be a citizen of the United States, of good moral character and sound physical condition. During the Sophomore year, students interested in AFROTC should make a formal application to the Professor of Aerospace Studies, AFROTC Detachment No. 340, College of the Holy Cross, Worcester, Massachusetts 01610.

Entry into the two-year program is on a competitive basis. Applicants must pass a written examination, the Air Force Physical Examination, and be selected by an interview board of Air Force Officers.

Army

Army Reserve Officer Training (ROTC) is offered by Worcester Polytechnic Institute and is available to all male and female students. Physically-qualified American citizens who complete the entire four-year program will be commissioned in the United States Army Reserve. Exceptionally well qualified cadets may be commissioned in the Regular Army.

Military science is designed to complement other instruction offered by WPI. Emphasis throughout is on the development of individual leadership abilities and preparation of the student for future important leadership roles in the Army.

The Military Science Department offers several concurrent programs designed to complement the WPI Plan. There are four variations of ROTC available to the student who desires to participate:

1. The traditional 4-year program during which the student would take MS courses two terms per academic year and attend one advanced summer camp between the third and fourth years.
2. The 2-year program designed especially for transfer students from non-ROTC schools. In this case, students attend a basic summer camp prior to their third year and then continue through their last two years as any other 4-year program student.
3. The third variation consists of a compressed program for students who feel they can complete academic studies in three years. The recommended compression is to take both the first and second year military science subjects in one year but other arrangements can be made. The courses themselves are those of the 4-year program.
4. The last variation includes modular training in the military or personal skills which replaces part or all of the classroom academics offered in the first two years. This type of compression can be worked out both for first and second year students.

Enrollment in ROTC produces military obligation for the first two years. Students entering the Advanced Course (usually at the start of the third year) may incur a three-year active-duty commitment as an officer in the U.S. Army, or attend 90 days Active Duty for Training.

Military Science Dept.
WPI
752-7209

Navy

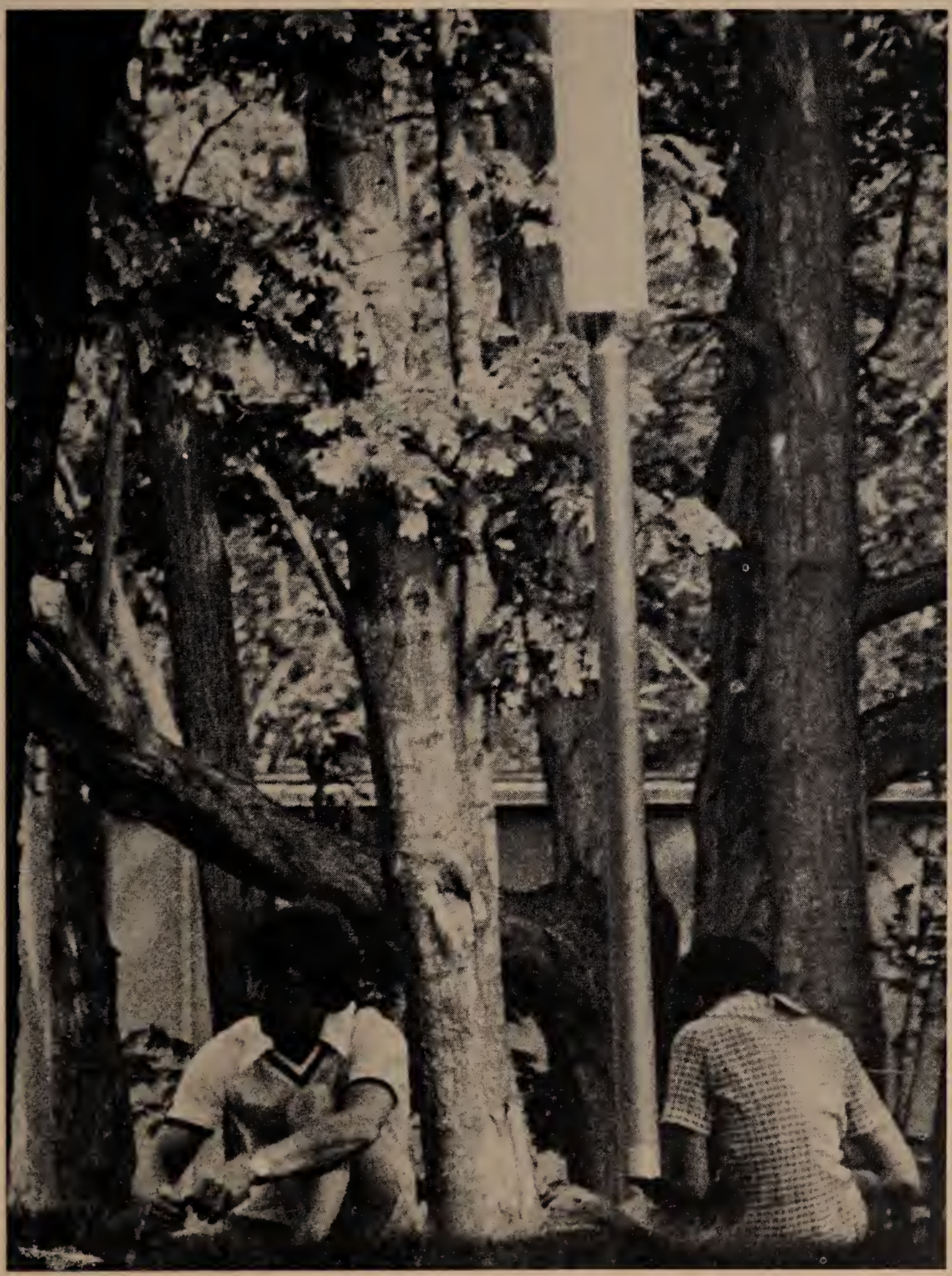
Courses leading to a commission in the United State Navy or Naval Reserve are available for all qualified male and female students at the College of the Holy Cross by means of cross-enrollment within the Consortium. While technical programs are most desireous, various non-technical disciplines are permissible. There is a two-year as well as a four-year program which requires the completion of one Naval Science course plus a two-hour lab session per semester. These courses are taught by experienced Naval or Marine Corps officers and, with the exception of the first semester freshman course and the lab session are fully accredited four credit courses.

Commissions in the United States Marine Corps or Marine Corps Reserve are also available as an option within the Naval Science Program. The paths followed for the Navy and Marine candidates are identical for the first two years of the four year program. Within the Marine option Marine Corps courses are substituted for the Naval Science courses in the junior and senior years of the program.

Scholarships for periods of two, three and four years are available which pay the full costs of tuition, instructional fees, textbooks, and a subsistence allowance of $100 per month. Summer training sessions are scheduled which are both exciting and challenging, affording an opportunity to derive practical experience as well as to travel. It should be noted that no military obligation is incurred prior to a student decision point which occurs at the beginning of the junior year.

Please direct any questions to the Professor of Naval Science, NROTC Unit, College of the Holy Cross, Worcester, Massachusetts 01610. Telephone (617) 793-2433 or 2434.

Departments and Programs



COURSE NUMBERS AND CATEGORIES

CATEGORIES

All course descriptions contained in the catalog have a category number of either 1, 2, or 3. Category 1 are those courses taught every year; Category 2 are those courses taught every 2 or 3 years; while Category 3 represents areas of interest whenever there is sufficient student demand and available staff time.

COURSE MASTER SCHEDULES

A schedule of courses offered will be published before the start of each term. The schedules will list courses offered, time, location, credits and faculty. The schedules are available at the Registrar's Office, Room A-204.

PENDING APPROVAL:

Some programs at WSC have been proposed as either major programs or minor programs. These programs have been starred noting that they are pending approval. In most cases these programs have been proposed to the Undergraduate Curriculum Committee at WSC for preliminary Planning; during this academic year these programs will be proposed for final approval. Should you have any questions concerning programs indicated as pending approval, please contact the Office of the Associate Academic Dean.

COURSE NUMBERS:

Courses designated for distribution requirements and/or as primarily for first year students have 100 level numbers, 200-level courses are intermediate but do not require previous experience, 300-level courses are advanced courses with a prerequisite, 400-level courses are for seniors. Seminars and Independent Study courses have 500-level numbers; internships are ascribed 600-level numbers.

Note: Undergraduate credit may be received for lower series graduate level courses (8-000 level courses), but only with permission of the faculty advisor.

Courses of Instruction

Art

Associate Professor:
Carter, Kosmer

Assistant Professor:
Casale, Dolphin, Kocher, Merle

The Art Department offers diversified courses thereby achieving a comprehensive type of program designed to meet many needs. One direction tends toward theoretical studies, i.e. art of the past, present, and future involving various art history courses, architecture, and city-planning. Another direction is towards personal involvement with actual art forms, as in the painting, print making and design courses. A third direction is in art education where the techniques needed to foster creative expression in both children and adults are stressed. These various directions endeavor to help the individual to develop his sensory perception, to become aware of the world around him and to perceive the possibilities of designing and changing the visual and physical environment.

A major in art is not available at the present time. A student may, however, elect a program of courses leading to a minor in art.

The department reserves the right to retain some student work for demonstration and exhibition purposes.

Recommended Program for a Minor in Art

Any sequence of electives with a minimum of three hours in art history.

COURSE DESCRIPTIONS

Course numbers relate to general level as well as to the specific area of study: 100-level courses are introductory, 200-level courses are intermediate but do not require previous art experience, 300-level courses are advanced courses with a prerequisite.

Courses are:

–01 ———————— Studio
–10 ———————— Art History
–20 ———————— Craft
–30 ———————— Environmental Esthetics
–40 ———————— Sculpture
–50 ———————— Graphics
–60 ———————— Art Education
–70 ———————— Special Media
–80 ———————— Seminar

Ar 101 Introduction to Art
Cat. 1. 3 hrs.
Prerequisites: none.
The theory and practice of art, analysis of methods and materials of the artists through use of slides and museum trips; studio work introduces student to technical procedures, principles of design, methods of representation.

Ar 102 Drawing in Various Media.
Cat. I. 3 hrs.
Prerequisites: none.
A studio course designed to acquaint the student with the various potentials of ink, pastels, charcoal, watercolor, etc., alone or in various combinations.

Ar 105 Introduction to Design.
Cat. I. 3 hrs.
Prerequisites: none.
Two-dimensional design; exploration of form, line, and shape will be conveyed through sensory images and techniques; lecture and studio.

Ar 110 Art History: Stonehenge to the Renaissance.
Cat. I. 3 hrs.
Prerequisites: none.
A survey of art styles and movements from prehistoric man to Renaissance; painting, sculpture, architecture; museum trips will be required.

Ar 111 Art History: The Renaissance to Picasso.
Cat. 1. 3 hrs.
Prerequisites: none.
Art styles and movements from Renaissance to present; the effects of scientific advances and sociological changes; emphasis on painting, but including sculpture and architecture; museum trips required.

Ar 120 Creative Crafts
Cat. I. 3 hrs.
Prerequisites: none.
A studio course investigating various techniques applicable to classroom teaching, stress on individual creative projects.

Ar 130 Environmental Design.
Cat. 1. 3 hrs.
Prerequisites: Any previous studio course.
This studio is concerned with the designing and study of such topics as urban areas, suburbia, citizenship esthetics, visual environmental trends, organic versus inorganic design and "systematic uglication". Open for anybody, with preference given to Urban Studies majors.

Ar 200 Creative Painting I.
Cat. I. 3 hrs.
Prerequisites: none.
The representative schools of painting; particular attention to personal applications; will use same techniques as the artist, but in a creative way.

Ar 202 Figure Drawing.
Cat. 1. 3 hrs.
Prerequisites: none.
Drawing of the male and female figure using pencil, Conte, pastel, pen and ink, watercolor, etc. (A model fee will be charged.)

Ar 210 Medieval Art.
Cat. 1. 3 hrs.
Prerequisites: none.
Developments for sculpture, architecture, and painting in western Europe from c. 800 to c. 1400; naturalism and the heralding of the Renaissance; the effects of the social and intellectual climate on art.

Ar 211 History of Renaissance Art.
Cat. 1. 3 hrs.
Prerequisites: none.
Development of art in Italy and northern Europe from c. 1400 to c. 1700; social and intellectual trends in their relationship to the arts; the changing status of the artist.

Ar 212 History of American Art.
Cat. 1. 3 hrs.
Prerequisites: none.
Painting, sculpture, architecture and urban planning from pre-revolutionary times to the present. Includes American Black art and regional schools of art.

Ar 213 Art of the 20th Century - Part I.
Cat. 1. 3 hrs.
Prerequisites: none.
Art movements from c. 1870 to the post World War I period — Monet, Van Gogh, Cezanne, Gaguin, Picasso, Matisse, Munch, Nolde, etc. Related expression in sculpture and architecture.

Ar 214 Art of the 20th Century - Part II.
Cat. I. 3 hrs.
Prerequisites: none.
Post World War I present Constructivism, De Stijl, metaphysical painters, dada, surrealism and other movements growing out of Germany, France and America. Abstract expressionism, op, pop, minimal and recent art.

Ar 230 Modern Architecture and City Planning.
Cat. I. 3 hrs.
Prerequisite: none.
Major developments in architecture and planning in Europe and America; 19th and 20 centuries.

Ar 231 History of Urban Form.
Cat. 2. 3 hrs.
Prerequisites: None.
From village to megalopolis: a study of the physical form and visual character of important communities and cities from ancient times to contemporary planning.

Ar 240 Sculpture I.
Cat. I. 3 hrs.
Prerequisites: none.
An introduction to basic sculpture techniques; clay and terra cotta studies of the head and figure; plaster, including piece molds.

Ar 250 Print Making.
Cat. I 3 hrs.
Prerequisite: Any studio course.
A studio course investigating various methods of producing prints, woodcuts, monoprints, etching, silk screen, etc.

Ar 251 Silkscreen Printing.
Cat. I. 3 hrs.
Prerequisites: none.
An introduction to silkscreen printing techniques; traditional methods and photographic procedures taught; students will make their own screens; silkscreen prints by contemporary artists studied.

Ar 260 Art in the Elementary School.
Cat. I. 3 credits.
Prerequisite: none.
The place and function of art in the elementary school; contemporary practices through laboratory experiences.

Ar 270 Mixed Media.
Cat. 2 3 hrs.
Prerequisite: Any studio course.
A studio course designed to explore the many different aspects of collage or mixed media as a two dimensional and/or a three dimensional medium employing both representational and abstract types of subject matter; multi-media will be employed.

Ar 300 Creative Painting II.
Cat. I. 3 hrs.
Prerequisites: Ar 200 or equivalent. Ar 300 is a continuation of Creative Painting I;
A studio course concerned with individual painting projects.

Ar 301 Portrait Painting.
Cat. 2. 3 hrs.

Prerequisites: Ar 200.
A studio course designed to acquaint the student with various styles which can be used in a creative approach to portraiture.

AR 302 Advanced Figure Drawing.
Cat. 2 3 hrs.
Prerequisites: Ar 202.
Art studies of the male and female figure: Finished Drawings in charcoal and pastel; preliminary studies for painting. (A model fee will be charged).

Ar 305 Advanced Design.
Cat. 1. 3 hrs.
Prerequisite: Ar 105.
Advanced problems in two-dimensional design.

Ar 340 Sculpture II.
Cat. 1. 3 hrs.
Prerequisites: Ar 240.
Work in various techniques including metal sculpture with introduction to wood (students must provide own wood chisels).

Ar 400 Special Topics In Art.
Cat. 3. 3 hrs.
Prerequisites: One art course plus consent of Instructor.
An in-depth examination of speical art topics varying with the particular interest of the instructor and designed to take advantage of current art exhibitions and issues. Course provides either advanced studio experience or a seminar on an art historical subject.

Ar 500 Independent Study in Art.
Cat. 1. 3 hrs.
Prerequisites: Limited to art minors with a minimum of 12 semester hours.
An opportunity for the student to engage in self-arranged studies (in consultation with the chosen instructor) according to individual needs and interests. A plan of study will be required prior to registration.

Note: Studio courses cost from $20 to $40 for materials. Please consider this expense before registering.

Biology

Professor:
Chauvin, Holle, Kreider, Paracer, Roberts.

Associate Professor:
Eager, Masterson, Russell, Thurston.

Assistant Professor:
Boger, Graham.

Eleanor Voutas,
Lab Instructor —— non-faculty.

The Biology Department offers courses and programs which provide for the general and technical education of interested students and preparation of majors and minors. The Faculty provides opportunities for students to gain a more informed and accurate understanding of fundamental life processes, an appreciation of history and diversity of life in the biosphere, a critical concern for the environment, and the role of biomolecular mechanisms in the maintenance of life.

The core curriculum in biology aims at preparing students for admission to graduate or professional schools, teaching at elementary and secondary levels, and positions in applied biology and ancillary fields. Biology electives taken to supplement the core provide the student with a variety of preprofessional training options. The biology courses may also be supplemented with courses in administrative studies which would complete the training of the individual for administration in the life sciences. (See Management, Option III)

BIOLOGY MAJOR REQUIREMENTS

A biology major is required to successfully complete the following core curriculum, which consists of General Botony and General Zoology, and a minimum of two of the following: 1) Genetics, 2) Principles of Ecology, 3) Microbiology, and 4) Introduction to Cell Biology. In addition, the biology major must pass Biology Seminar (2 credits) and a minimum of five additional courses, numbered Bi 211 or above, from the Departmental offerings with the advice and consent of a Biology Faculty Advisor. Courses exceeding the above limits will be counted beyond the minimum total required.

Transfer students and advanced students who desire to become biology majors must have their transcripts reviewed by the Biology Department for the purpose of adaptation of their programs to satisfy the requirements of the Department for a Biology Major status.

A course is designated as a 3 or 4 credit offering while a half course is 1 or 2 credits. A grade point average of 2.4 must be maintained in biology courses while a grade point average of 2.0 must be maintained in the ancillary science and mathematics courses.

It is highly recommended that students considering graduate and professional work take courses in the ancillary sciences; minimum recommended: "general and organic chemistry, general physics, calculus, introduction to computer science and/or statistics."

Students are reminded that the program/course structure spelled out in this catalog for the major is intended to serve as a guide; the student is required to meet regularly with his/her biology advisor to qualify for certification of the major as the final step toward graduation.

Biology Minor Requirements

A biology minor is required to complete the following: The Core, which consists of: General Botany and General Zoology, and a minimum of two of the following courses — 1) Genetics, 2) Principles of Ecology, 3) Microbiology, and 4) Introduction to Cell Biology. In addition, the minor must complete two additional 3 or 4 credit courses, numbered Bi 211 or above, with the advice and consent of a Biology Faculty Advisor. The biology minor should also complete a minimum of 6 credit hours in the ancillary sciences.

Biology Major — Education Minor Requirements

Students who wish to prepare for certification to teach in the secondary schools must also minor in secondary education. A biology major-education minor is sub-

ject to approval by both the Departments of Biology and Education. Courses required for a minor in education are included in the Education Department's section of this catalog.

Eligibility for participation in student teaching for Secondary School requires successful completion of the following:

Biology (a minimum of 6 approved courses with minimum quality point average of 2.4);

Mathematics (a minimum of 6 approved credits in statistics, algebra, trigonometry, analytical geometry, calculus, or computer science);

RECOMMENDED PROGRAM FOR BIOLOGY MAJORS (B.A./B.S.)

FRESHMAN

Fall Semester

Mathematics
General Chemistry
General Botany
or
General Zoology

Spring Semester

Mathematics
General Chemistry
General Zoology
or
Botany

SOPHOMORE

Fall Semester

Principles of Ecology*
Introduction to Cell Biology*

Spring Semester

Microbiology*
Genetics*

JUNIOR

Fall Semester

Biology Elective**
Comparative Animal Physiology

Spring Semester

Biology Elective**
Comparative Vertebrate Anatomy

SENIOR

Fall Semester

Biology Elective**
Invertebrate Zoology

Spring Semester

Biology Seminar***
Embryology

* *The biology major must complete a minimum of two courses from this core group of four.*

** *A minimum of five biology courses must be elected in addition to the "core" of General Botany and General Zoology, and two of the four indicated*.*

*** *May be taken either semester; required by all majors.*

Biology Elective Courses

A minimum of five courses numbered above Bi 211 from the following list must be elected with the advice and consent of your advisor. Students should note that most of these courses are offered on an alternative year basis.

Microtechniques
Biological Techniques
Invertebrate Zoology
Entomology
Parasitology
Marine Biology
Field Biology
Mycology
Plant Physiology
Molecular Biology
Histology
Embryology
Endocrinology
Comp. Animal Physiology
Mammalian Physiology
Environmental Physiology
Vertebrate Natural History: Ectotherm
Wildlife Investigational Techniques

NUCLEAR MEDICINE TECHNOLOGY

The Department of Biology (as well as the Departments of Chemistry and Natural Science/Physics) also offer a concentration in Nuclear Medicine Technology. This program was developed and is offered in conjunction with the University of Massachusetts Medical School.

Nuclear Medicine procedures are an outgrowth of techniques developed in hospitals, particularly in radiology, pathology, and internal medicine departments. These procedures are used for both diagnostic and therapeutic purposes. Nuclear Medicine Technicians must have special abilities.

The program is administered at Worcester State College by a Program Advisory Committee. Students who are interested in being considered as a candidate for admission to the Nuclear Medicine Technology Program should contact the NMT Nominating Committee through the Worcester State College Academic Advising Office. The Program is limited to a relatively few students and a competitive academic background in scientific methods, physics and mathematics is required.

Technical Specialty Courses

The technical speciality courses of an NMT Program consist of the eleven courses listed below:

COURSE	CREDITS
Introduction and Hospital Orientation	0
Radiation Physics	3
Radiation Biology	3
Nuclear Instrumentation I-Physics	4
Nuclear Instrumentation II-Physics	4
Clinical Practicum I - Biology	10
Clinical Practicum II-Biology	4
Clinical Practicum III - Biology	4
Fundamentals of Radiochemistry and Radiopharmaceuticals	4
Clincal Nuclear Medicine Technology I-Biology	4
Clinical Nuclear Medicine Technology II - Biology	3

COURSE DESCRIPTIONS

Bi 101 Social Biology.
Cat. I. 3 hrs.
Prerequisites: none.
Introductory course for the non-major; the "interface" between biology and society as it focuses upon the biological problems of the day; social implications of transplants, aging, genetics, reproduction and population, behavior discussed; understanding; the role of biological man and psychosocial man in the modern world; guest lecturers invited to participate; three lectures per week. A distribution elective for the non-major.

Bi 102 Diseases and Mankind.
Cat. I. 3 hrs.
Prerequisite: none.
Introductory course; an epidemiological approach to the study of major diseases which have had lasting effects on man in the ancient and modern world; the tri-ad of infection, host, parasite, environment stressed; impact of disease upon economics, social life, history, religion, science, philosophy, art and literature; the nature and current significance of disease; guest lecturers invited to participate; three lectures per week. A distributional elective for the non-major.

Bi 103 Botanical World
Cat. 2.3 hrs.
Prerequisites: none.
Understanding and appreciating the plant world; identification keys for native trees, flowers, algae, and fungi; lectures, demonstrations, field trips; student collections are encouraged; three lectures per week. A distributional elective for the non-major.

Bi 104 Plants and Human Affairs.
Cat. 2 3 hrs.
Prerequisites: none.
The influence of plants on the course of human civilizations; the role of plants as providers of man's food, clothing, shelter and medicine. The impact of plants in the areas of art, religion, literature, folklore, politics, and human behavior will be discussed, three lectures per week. A distributional elective for the non-major.

Bi 111 General Biology I.
Cat. I. 3 hrs.
Prerequisites: none.
Recommended for the non-major. Introductory biological principles and current biological topics — especially as they apply to man. Considers characteristics of living systems, molecular and cellular principles, and homeostatic systems (especially in the human organism) in both lecture and laboratory settings. Two lectures and a two-hour laboratory per week.

Bi 112 General Biology II.
Cat. I. 3 hrs.
Prerequisites: none.
Recommended for the non-major. Introductory biological principles and current biological topics — especially as they apply to man. Considers reproduction, heredity, evolution, ecology, and appropriate contemporary biological topics in such areas as conservation, population, pollution, etc. in both lecture and laboratory settings. Two lectures and a two-hour laboratory per week.

Bi 151 General Botany.
Cat. I. 4 hrs.
Prerequisites: none — required for biology majors.
The plant kingdom, taxonomy, natural history, anatomy, and evolutionary relationships; identification, classification, and dissection from macro- and microscopic viewpoints; three lectures and a three-hour laboratory per week.

Bi 152 General Zoology.
Cat. I. 4 hrs.
Prerequisites: none — required for biology majors.
The fundamental concepts of animal biology, including anatomy and physiology, development, genetics, taxonomy, ecology, and evolution; three lectures and a three hour laboratory per week.

Bi 161 Human Anatomy and Physiology I.
Cat. I. 4 hrs.
Prerequisites: Bi 112, Bi 152, or departmental permission.
Concentrates on subcellular and cellular levels and on the following systems: skeletal, muscular, nervous and endocrine.

Bi 162 Human Anatomy and Physiology II.
Cat. I. 4 hrs.
Prerequisites: Bi 112, Bi 152, or departmental permission.
Concentrates on blood, cardiovascular, respiratory, digestive, excretory, electrolyte and acid-base balance, and reproductive systems.

Bi 201 Genetics.
Cat. I 3 hrs.
Prerequisites: Bi 151 and 152.
Cytological and biochemical basis of inheritance; nature and function of genetic material; Mendelian genetics; population genetics; demonstrations supplement lectures; three lectures per week.

Bi 202 Microbiology.
Cat. I. 3 hrs.
Prerequisites: Bi 151 and Bi 152.
The inter-relationship of host, parasite, and environment; morphology, physiology, stress factors, infection and immunity, epidemiology; microbiological techniques and appropriate experiments; three lectures and a three-hour laboratory per week.

Bi 203 Principles of Ecology.
Cat. I. 3 hrs.
Prerequisites: Bi 151 and Bi 152.
Basic ecological theory relating to organism-environment interactions; population dynamics, and systems ecology.

Bi 204 Introduction to Cell Biology.
Cat. I. 3 hrs.
Prerequisites: Bi 151 and Bi 152.
The ultrastructure and cytochemistry of cell organelles are related to their functions; discussion of the evolution of cellular molecular machinery, cell bioenergetics, and nuclear phenomena; demonstrations supplement the lectures; three lectures per week.

Bi 211 Microtechniques.
Cat. 2. 4 hrs.
Prerequisites: none, but Bi 151 and Bi 152 recommended.
Practical experience in making permanent miscroscope slides of plant and animal tissue by means of paraffin embedment; involves selection of material, killing and fixation, dehydration, embedment, sectioning, mounting and staining; two lectures and a two-hour laboratory twice per week.

Bi 212 Invertebrate Zoology.
Cat. 2 4 hrs.
Prerequisites: two courses in biology.
Anatomy, taxonomy, natural history and evolutionary relationships of selected invertebrate phyla; a review of the international Congress of Zoological Nomenclature and selected articles of its Code; specimens are identified, classified, and dissected; three lectures and a three-hour laboratory per week.

Bi 221 Biological Techniques
Cat. 2. 3 hrs.
Prerequisites: Bi 151 and Bi 152.
Discussion of the goals, methods, and limitations of science; a treatment of research in biology; the literature of biology; measurement and techniques; instrumentation; data organization; experimental design and presentation of results; demonstrations supplement lectures; three lectures per week.

Bi 231 Comparative Vertebrate Anatomy.
Cat. 2. 4 hrs.
Prerequisites: four courses in biology.
Taxonomy and phylogeny of prochordates and chordates reviewed; systematic comparison of the morphology of representative chordates to illustrate evolution, establish homology, analogy, and nomenclature; identification and classification of specimen; dissection of shark and cat; three lectures and a three-hour laboratory per week.

Bi 235 Comparative Animal Physiology.
Cat. 2. 3 hrs.
Prerequisites: Bi 151 and Bi 152.
Comparison of major physiological processes; the physiological basis for particular ecological niche; and study of animal diversity; representation topics — nervous integration, circulation, respiration, metabolism, nutrition, inorganic ions and excretion, and water and electrolyte balance; three lectures per week.

Bi 241 Entomology.
Cat. 2. 4 hrs.
Prerequisites: three courses in biology to include Bi 152 or equivalent.
Anatomy, behavior, habitat, natural history, physiology, and taxonomy of insects; ecological factors; chemical and biological control; insect specimen collections required; three lectures and a three-hour laboratory per week.

Bi 251 Mycology.
Cat. 2. 4 hrs.
Prerequisites: three courses in biology.
The fungal world from morphological, cytological, physiological, and evolutionary viewpoints; genera and species of economic importance; culturing methods; three lectures and a three- hour laboratory per week.

Bi 261 Basic Kinesiology.
Cat. 3. 3 hrs.
Prerequisites: none.
Structure and function of human skeletal muscles in relationship to motion and general body mechanics under normal and stress conditions; three lectures per week.

Bi 271 Histology.
Cat. 2. 4 hrs.
Prerequisites: Bi 151, 152, and any two core courses.
The structure and function of all major tissues of the animal body. Laboratory stresses study of prepared animal tissue slides; each student is required to prepare at least one tissue; three lectures and a three-hour laboratory per week.

Bi 301 Plant Physiology.
Cat. 2 4 hrs.
Prerequisites: Bi 151 or equivalent.
The major areas of plant physiology emphasizing fundamental principles underlying plant processes and plan responses to environmental factors; the physiological processes involved in growth, development, nutrition, and metabolism of plants; three lectures and a three-hour laboratory per week.

Bi 311 Embryology.
Cat. 2. 4 hrs.
Prerequisites: four courses in biology.
The history of embryology and ontogeny of selected invertebrate and vertebrate embryos; principles of cellular, tissue, and organ differentiation and mental stages; three lectures and a three-hour laboratory per week.

Bi 331 Marine Biology.
Cat. 2. 4 hrs.
Prerequisites: four courses in biology to include Bi 212.
The biology of flora and fauna in the marine environment; the distribution and production of plankton, nekton, and benthos, zoogeography, evolution, bioeconomic factors and potential; students should anticipate assisting in the implementation and underwriting of field trips; three lectures and a three hour laboratory per week.

Bi 332 Parasitology.
Cat. 2. 4 hrs.
Prerequisites: four courses in biology to include Bi 152 or equivalent.
Disease-causing parasites; biological, ecological, and genetic aspects of parasitism; host-parasite interactions; the concept of disease, adaptive modifications, vectoring, and parasite evolution; specimens will be collected and identified; three lectures and a three-hour laboratory per week.

Bi 341 Field Biology.
Cat. 2. 4 hrs.
Prerequisites: Bi 151, Bi 152, and Bi 203.
The habitat approach to practical applications of ecological principles through field techniques; familarizing the student with particular habitats and their biotic and physical identify; field methods, instrumentation and their special applications; field trips are required; three lectures and a three-hour laboratory per week.

Bi 342 Vertebrate Natural History: Ectotherms.
Cat. 2. 4 hrs.
Prerequisites:
Life histories, adaptations, distribution, ecology, systematics, and economic importance of ectothermic (cold-blooded) vertebrates (fish, amphibians, and reptiles) of the northeastern United States; laboratory and field work concentrates on native species; three lectures and a three-hour laboratory per week.

Bi 352 Wildlife Investigational Techniques.
Cat. 2. 4 hrs.
Prerequisites: Bi 151, Bi 152, and Bi 203.
Procedures for collecting and analysis of laboratory data in wildlife surveys, management and administrative studies, and research investigations; concentrates on vertebrate game species with adaptations for other forms of wildlife; instrumentation, record keeping, habitat evaluation, population estimation, determination of sex and age, population analysis, field preservation of live material, post-mortem exams, mortality measurement, food habit study, project planning, use of the literature on wildlife, and preparation of research reports; three lectures and a three-hour laboratory per week.

Bi 371 Mammalian Physiology.
Cat. 2. 4 hrs.
Prerequisites: four courses in biology.
Detailed physiology of the circulatory, respiratory, muscular and nervous systems and the topic of energy metabolism in mammals and man; techniques for measuring physiological phenomena; experimental approach and laboratory write-ups are stressed; three lectures and a three-hour laboratory per week.

Bi 381 Exercise Physiology.
Cat. 2. 3 hrs.
Prerequisites: Bi 161-2 or Bi 231 and Bi 371, or Bi 231 and Bi 361.
The functions of the numerous systems of the human body during exercise and factors that may modify these functions such as diet, drugs, training regimens, levels of physical fitness, health, and environmental factors.

Bi 412 Molecular Biology.
Cat. 2. 4 hrs.
Prerequisites: four courses in biology.
Genesis and function of classical biology with stress on molecular form; evolution, exploitation, and ramification of molecular structure in cells, organs and organisms; demonstrations, experiments, and readings; three lectures and a three-hour laboratory per week.

Bi 422 Environmental Physiology.
Cat. 2. 4 hrs.
Prerequisites: Bi 235 or Bi 371 or Bi 162 and one chemistry course.
Mammalian physiological systems involved in response to extreme natural and artificial environments; specific stresses, mechanisms of adaption, pathology, and homeostatic mechanisms; three lectures and a three-hour laboratory per week.

Bi 451 Selected Topics in Biological Sciences.
Cat. 3. 1-4 hrs.
Prerequisites: departmental permission and consent of instructor.
Each topic is a lecture and/or labortatory course in a selected area of the biological sciences presented by a departmental Instructor(s) and Guest Lecturers (where applicable); topic to be announced in advance; topics offered will meet student needs and interests.

Bi 501 Biology Seminar.
Cat. I. 2 hrs.
Prerequisites: departmental permission.
Preparation and presentation of biological topics, chosen with the advice and consent of a Faculty Advisor; minimum of two scheduled departmentally supervised meetings each week.

Bi 555 Biological Problems.
Cat. 3. 1-4 hrs.
Prerequisites: departmental permission and consent of instructor. Intended for qualified, upper-level biology major.
Advanced semi-independent study of an approved biological problem, directed by a departmental faculty member; minimum of two departmentally supervised meetings per week.

Bi 601 Biology Internship.
Cat. 3. 1-6 hrs.
Prerequisites: All Departmental requirements for the major must have first been fulfilled, with the exception of Bi 501, Biology Seminar. Departmental approval also required.
This course is designed for seniors who have completed all requirements for the major (except biology seminar). The student should receive practical training involving the application of biological principles in association with a private or governmental agency. Approved students will work under the joint supervision of a Biology faculty advisor and a sponsor at the agency involved. The student must apply for the internship and obtain Departmental approval during the semester prior to the desired enrollment date.

Paul Miville
Supervising Lab. Technician -non-faculty

Chemistry

Professor:
Merken, Zoll

Associate Professor:
Cooper, Wheaton

Assistant Professor:
Ferguson, Harris

Robert A. Clark
Lab Instructor —— non-faculty

Marcia Wetherbee
Lab Instructor —— non-faculty

It is the aim of the Department of Chemistry to provide programs to meet the needs and interests of students. Such needs and interests may range from the student majoring in a non-technical area who is interested in learning something about chemistry and the way in which it functions as an experimental science to the student who wishes to undertake a program of professional training in chemistry to prepare him to go on to graduate school or to do chemical research in government or industry. The student majoring in a non-technical area who wants to learn something about chemistry and the way it functions is advised to take Ch 110 and Ch 111 or Ch 120-121. The student majoring in a science such as physics or biology who wishes to take a course in General Chemistry is advised to take Ch 120 and Ch 121.

The sequence of courses which makes up the major in chemistry described below together with an appropriate selection of electives will provide a strong undergraduate preparation for students wishing to enter a variety of career fields in chemistry and related areas. Among these career fields are: research in the traditional areas of chemistry (inorganic, organic, physical, analytical, and biochemistry) and in related interdisciplinary areas (pharmaceutical chemistry, medicinal chemistry, environmental chemistry, geological chemistry, agricultural chemistry, oceanography, metalurgy); the teaching of these areas of chemistry and related fields at the secondary school and college level; and chemical technical services. Additional career fields for which the major in chemistry provides preparation include chemical sales, chemical and scientific writing and editing, and a variety of allied health career fields such as medicine, dentistry, veterinary medicine, medical technology, public health, environmental health, pharmacy, etc. Depending on the career sought the student may need to undertake further study following the completion of his or her Bachelor's program.

Chemistry Major Requirements

The requirements for a major in Chemistry are: General Chemistry I-II, Chemical Analysis: Introduction to Modern Methods, or Instrumental Analysis; Organic Chemistry I; Organic Chemistry Laboratory I; Physical Chemistry I; and Physical Chemistry Laboratory I. In addition to the above courses, which total 22 semester hours, the student is required to elect at least 8 semester hours in chemistry credits to be chosen from Organic Chemistry II, Organic Chemistry Laboratory II, Physical Chemistry II, Physical Chemistry Laboratory II, Advanced Inorganic Chemistry, Qualitative Organic Analysis, Biochemistry, Chemical Analysis, Instrumental Analysis, Special Topics in Physical Chemistry, Natural Products, and Independent Study.

Chemistry majors are also expected to take mathematics through Calculus I-II and to take Physics I-II, or General Physics I-II. It is recommended that chemistry majors complete two years of study of a foreign language preferably Beginning German I-II through Intermediate German I-II. Students with a strong mathematical background from high school are advised to select Calculus I-II in the Freshman year, otherwise, College Algebra and Analytical Geometry are recommended. A course in Computer Science is also strongly recommended.

Students who desire a strong program of professional training in chemistry are advised to take the following sequence of

courses, which is based on minimum standards set by the American Chemical Society Committee on Professional Education:

General Chemistry I-II
Organic Chemistry I-II
Organic Chemistry Laboratory I-II
Physical Chemistry I-II
Physical Chemistry Laboratory I-II
Advanced Inorganic Chemistry
Instrumental Analysis
2 advanced courses in Chemistry, Physics, Mathematics, or Computer Science.

NOTE: The student intending to go on to graduate school in chemistry or directly into chemical research in government or industry is expected to take at least two 400 level courses in chemistry.

Chemistry majors planning to enter the allied health fields, including medicine and denistry, should select several courses in biology and should also select courses in the social sciences and humanities.

Chemistry majors planning to enter teaching at the secondary school level are advised to select a minor in secondary education and possibly an additional minor in another science such as biology, physics, or mathematics.

Minor Requirements

Ch 120-121 followed by at least 10 hours of chemistry electives selected from 200, 300 and 400 level courses.

Recommended Program for Chemistry Majors (B.A./B.S.)

FRESHMAN

Fall Semester

General Chemistry I
College Algebra or Calculus I

Spring Semester

General Chemistry II
College Trigonometry or Calculus II

SOPHOMORE

Fall Semester

Organic Chemistry I
Organic Chemistry Laboratory I
Calculus I (if not previously taken)

Spring Semester

Chemistry Elective(s)
Calculus II (if not previously taken)

JUNIOR

Fall Semester

Physical Chemistry I
Physical Chemistry Laboratory I
General Physics I or Physics I

Spring Semester

Chemistry Elective(s)
General Physics II or Physics II

SENIOR

Fall Semester

Spring Semester

Chemistry Elective(s)

COURSE DESCRIPTIONS

Nuclear Medicine Technology-*See Write-up under Department of Biology.*

Ch 105 The Nature of Chemical Change.
Cat.1. 3 hrs.
Prerequisites: none.
Properties of matter viewed through simple reactions of familar substances; two lectures and a two-hour laboratory per week.

Ch 110 Introduction to General, Organic, and Biochemistry I.
Cat. 1. 4 hrs.
Prerequisites: none.

Ch 111 Introduction to General, Organic, and Biochemistry II.
Cat. 1. 4 hrs.
Prerequisites: Ch 110.
These courses are for students who do not plan to take further courses in chemistry.

Ch 110– Atomic structure, chemical bonding, periodic trends, stoichiometry, equilibira and reaction rates, oxidation and reduction, acid and base theory, radioactivity and nuclear chemistry, and introduction to organic chemistry; three lectures and a three hour laboratory per week.

Ch 111—A continuation of Introduction to Chemistry I; continuation of the study of functional groups and reactions of organic chemistry begun in Ch 110 followed by a study of biochemistry, including discussions of carbohydrates, proteins, lipids, nucleic acids, metabolic pathways, and enzymes; three lectures and a three hour laboratory per week.

Ch 120 General Chemistry I.
Cat. 1. 4 hrs.
Prerequisites: none.

Ch 121 General Chemistry II.
Cat. 1. 4 hrs.
Prerequisites: Ch 120.

Ch 120—modern survey of the field of chemistry; gives the student a firm grounding in chemical principles and leads him to an appreciation of the impact of chemical science on man and his environment; topics — modern theories of the atom and chemical bonding, chemical equations, heats of reaction, states of matter, equilibrium, properties of solutions, acids and bases. For science majors.

Ch 121—continuation of General Chemistry I; topics — elements of thermodynamics, rates of chemical reactions, oxidation-reduction reactions, and electro-chemistry, transition metal complexes, and topics from organic chemistry, biochemistry, environmental chemistry, and nuclear chemistry.

Ch 201 Organic Chemistry I (lectures only).
Cat. 1. 3 hrs.
Prerequisites: Ch 120, Ch 121.

Ch 202 Organic Chemistry II (lectures only).
Cat. I. 3 hrs.
Prerequisite: Ch 201.

Ch 201—structure, reactivity, reactions, mechanisms, and stereochemistry of the alkanes, alkynes, dienes, alkyl halides, and benzene; three lectures per week.

Ch 202—continuation of Organic Chemistry I; alcohols, ethers, carboxylic acids, aldehydes, ketones, amines and phenols; three lectures per week.

Ch 203 Organic Chemistry Laboratory I.
Cat. I. 2 hrs.
Prerequisites: Ch 201 taken previously or concurrently.

Ch 204 Organic Chemistry Laboratory II.
Cat. I. 2 hrs.
Prerequisite: Ch 203.

Ch 203—techniques of preparation, purification, and identification of organic compounds; one four-hour laboratory per week.

Ch 204—continuation of Organic Chemistry Laboratory I; application of basic techniques to more complicated synthetic problems; one four-hour laboratory per week.

Ch 210 Chemical Analysis: An Introduction To Modern Methods.
Cat. I. 4 hrs.
Prerequisites: Ch 120, Ch 121.
Introduction to modern instrumental methods of chemical analysis with emphasis on application to environmental and biological problems; lectures offer instruction in techniques of spectroscopy, chromatography, and polarography; laboratory in project-oriented and includes field work.

Ch 301 Physical Chemistry I (lectures only).
Cat. I. 3 hrs.
Prerequisites: Ch 120, Ch 121; Ma 300, Ma 301.

Ch 302 Physical Chemistry II (lectures only)
Cat. 1. 3 hrs.
Prerequisites: Ch 301.

Ch 301—first, second, and third laws of thermodynamics; chemical, solution, and phase equilibria; electrochemistry; three lectures per week.

Ch 302—continuation of Physical Chemistry I; kinetic molecular theory of gases, chemical kinetics, introduction to quantum theory, modern theories of chemical bonding, spectroscopy, and molecular structure; three lectures per week.

Ch 303 Physical Chemistry Laboratory I.
Cat. 1. 2 hrs.
Prerequisite: Ch 301 taken previously or concurrently.

Ch 304 Physical Chemistry Laboratory II.
Cat. 1. 2 hrs.
Prerequisite: Ch 302 taken previously or concurrently.

Ch 303—methods of physical measurement on chemical systems and their application to the determination of thermodynamic data; one four-hour laboratory per week.

Ch 304—continuation of Physical Chemistry Laborary I; project oriented laboratory dealing with physical methods of measurement and their applications to the study of chemical reaction mechanisms and molecular properties; one four-hour laboratory per week.

Ch 410 Biochemistry.
Cat. 2. 4 hrs.
Prerequisites: Ch 201, Ch 202, Ch 301, Ch 302, or the consent of instructor.
Chemistry and metabolism of proteins, nucleic acids, carbohydrates, and lipids; thermodynamics; enzymes, nucleic acids and protein biosysthesis; biological oxidations; and correlations in intermediary metabolism; three lectures and a three-hour laboratory per week.

Ch 420 Qualitative Organic Analysis.
Cat. 2. 3 hrs.
Prerequisites: Ch 201, Ch 202.
Analysis of organic compounds having one or two functional groups, separation of mixtures, and identification of substances by their physical properties and by the preparation of derivatives; two lectures and a four-hour laboratory per week.

Ch 430 Advanced Inorganic Chemistry.
Cat. 2 3 hrs.
Prerequisites: Ch 301 or consent of instructor.
Structure and reactions of the elements and their inorganic compounds; wave mechanics, theory of the chemical bond, spectroscopy, inorganic stereochemistry, crystal field theory, coordination chemistry, and atomic structure; three lectures per week.

Ch 440 Foundations of Chemistry and Physics.
Cat. 3. 3 hrs.
Prerequisites: Ch 120, Ch 121, Py 120, Py 121, or consent of instructor.
History, philosophy, methods, and concepts of physical science through case histories, original scientific papers, and biographies; emphasizes an understanding of science and scientists; three lectures per week. Open to science and non-science majors.

Ch 450 Special Topics in Physical Chemistry.
Cat. 3. 3 hrs.
Prerequisites: Ch 301, Ch 302.
Survey of frontier areas of physical chemistry; informal seminar discussions interspersed with lectures by various members of the chemistry faculty; chemical kinetics, quantum theory of chemical bonding, molecular spectroscopy, group theory and symmetry properties of molecules; three lectures per week.

Ch 460 Natural Products.
Cat. 2. 3 hrs.
Prerequisites: Ch 201, Ch 202.
An advanced organic chemistry course concerning the structure, synthesis, isolation, and biochemical significance of representative simple and complex heterocyclic and alicyclic compounds such as alkaloids, terpenes, steroids, and certain antibiotics. Three lectures per week.

Ch 470 Instrumental Analysis.
Cat. 2. 4 hrs.
Prerequisites: Ch 120, Ch 121, Ch 301.
Advanced level survey of instrumental methods of separation and analysis including spectrophotometry, potentiometry, polarography, and chromatography; lectures deal with theoretical foundations and principles of operation of types of instrumentation studies; laboratories are project oriented and deal with variety of kinds of problems in chemical analysis; course intended primarily for chemistry majors; two lectures and two three-hour laboratories per week.

Ch 500 Independent Study in Chemistry.
Cat. I. 1-3 hrs.
Prerequisite: Permission of the department.
For the individual student who wishes to undertake advanced work in chemistry; independent study on a problem mutually agreeable to the student and to the instructor; this course may be taken for credit for more than one semester.

Communication Disorders

Associate Professor:
Lysaght

Assistant Professor:
Cohen, Haroian, Hengen, McLaughlin, Read

The Department of Communication Disorders offers courses in the area of Speech and Hearing Sciences as well as other courses that are basic to the study of Communication Disorders. The academic program includes an undergraduate major and electives for any students meeting course prerequisites.

Students interested in Communication Disorders are advised that the undergraduate degree is a pre-professional degree, preparatory for admission to a graduate program in Speech Pathology or Audiology.

Communication Disorders majors look forward to positions as speech clinicians in public school speech therapy programs, rehabilitation centers, hospital speech and hearing clinics, language disorder units, nursing homes, special care facilities, specialized voice and speech science labs, hearing centers, schools for the deaf and special audiological test facilities.

UNDERGRADUATE ADMISSION PROCEDURE

FRESHMEN – Any freshman admitted to Worcester State College may declare a communication disorders major. This is only a delcaration of intent however, and the student is not formally accepted into the program until the second semester of the sophomore year.

Requirements For Admission Into the Program

The student must complete and earn a grade point average of 2.75 in the following courses: Speech pathology, Phonetics, Anatomy and Physiology of the Speech and Hearing Mechanism, Introduction to Hearing Science, Normal Speech and Language Development.

Having completed the five initial courses the student may then petition the Department of Communication Disorders for formal acceptance into the major. The student must submit a petition and a letter requesting formal application to the Communication Disorder major at the end of the first semester , sophomore year. Petitions will be reviewed during the second semester of their sophomore year of studies. The petition forms are available from the chairman of the Department of Communication Disorders.

The student must have a C+ (Two point seven five) or better overall grade point average.

The student must have adequate speech and language patterns as determined by the department faculty members.

Personal and Social Characteristics — Students must possess the qualities that the profession of Communication Disorders considers imperative for success within the field: ability to get along with others, peers, professionals and clinical clientele. They must also demonstrate attitudes of responsibility, dependibility and resourcefulness. Evidence obtained from evaluation forms completed by the department faculty members and based upon faculty/student contacts will be used to judge personal and social characteristics.

Approximately 30 students will be admitted to the Communication Disorders major each year.

Formal notice of acceptance or rejection will be give to applicants during second semester of the Sophomore year.

Retention in the Department of Communication Disorders

Admission to Clinical Practicum courses— Students are required to complete clinical practica in Speech Rehabilitation and Aural Rehabilitation. Students may elect a clinical practicum in Diagnostic Audiology. Entrance to all practica courses is dependent upon the maintenance of a grade point average of 2.75 or better in both the major area courses as well as the overall course work.

Throughout their major program students will be advised and counseled as to their progress. If the student's performance is not adequate based upon academic and practica experiences, he/she will be advised to consider another area of specialization and will be discontinued from the Communication Disorders major.

Transfer Admissions

The transfer student is advised that his/her admission to the Communication Disorders major is contingent upon meeting the same requirements as outlined for freshman. It is further advised that his program will extend for more than a two year period.

A very limited number of transfer students will be admittted to the program each year.

The Communication Disorders Center

The Department maintains a Communications Disorders Center at the college. Faculty members, as well as students under supervision, evaluate children and adults from the surrounding communities for placement in habilitative language, speech and/or hearing programs within the Center. Developmental disorders (delayed speech and language development, stuttering, emotional disturbance, articulation problems) as well as organically-based disorders (cleft palate, cerebral palsy, dysphasia, dysarthria, mental retardation, brain damage, hard-of-hearing) are represented in the caseload of the Center. Clients accepted into a habilitative program at the Center are assigned a student clinician with whom they work on a regular basis. Faculty members supervise and evaluate the work of the student clinician and the progress of the client.

Communication Disorders Major Requirements

Each major must successfully complete thirty-nine semester hours of Communication Disorders courses. The following courses are required: Speech Pathology, Phonetics, Anatomy and Physiology of the Speech and Hearing Mechanisms, Introduction to Hearing Science, Audiology I, Normal Development of Speech and Language, Language Disorders,

Voice and Articulation, Rehabilitation of the Auditorily Impaired, Rhythm Problems and Allied Disorders of Speech, Speech Correction - Clinical Practicum I, Speech Correction – Clinical Practicum II, and Aural Rehabilitation Practicum.

However, students may elect to take additional course work in Communication Disorders as long as they follow the prerequisite system.

Explanation of Course Numbering in Communication Disorders

Cd 100 – 199	Introductory Courses – Freshman level.
Cd 200 – 299	Basic background for Communication Disorders majors, but open to all who meet prerequisites where specified.
Cd 300 – 399	Continuation of theoretical and clinical practicum. Junior level and above only.
Cd400 – 499	Advanced clinical practicum for Communication Disorders majors, by satisfaction of prerequisites.
Cd 500 – 599	Seminars and Independent Study. Junior level and/or Senior level.

RECOMMENDED PROGRAM FOR A MAJOR IN COMMUNICATION DISORDERS (B.A./B.S.)

FRESHMAN*

Fall Semester

Speech Pathology
Phonetics

Spring Semester

Anatomy & Physiology of the Speech & Hearing Mechanism
Normal Development of Speech and Language

SOPHOMORE

Fall Semester

Voice and Articulation
Introduction to Hearing Science

Spring Semester

Audiology I
Rhythm Problems & Allied Disorders of Speech

JUNIOR

Fall Semester

Rehabilitation of the Auditorily Impaired
Language Disorders

Spring Semester

Audiology Practicum I
Speech Correction – Clinical Practicum I

SENIOR

Fall Semester

Speech Correction – Clinical Practicum II

Spring Semester

Aural Rehabilitation Practicum

**The Department recommends that majors fulfill, as far as possible, their general foundation and distribution requirements during their first two years.*

COURSE DESCRIPTIONS

Cd 100 Speech Pathology.
Cat. I. 3 hrs.
Prerequisites: None.
Nature and causes of organic and functional speech problems, emphasis on articulation, cerebral palsy, and voice; consideration of therapeutic techniques.

Cd 105 Phonetics.
Cat. I. 3 hrs.
Prerequisites: None.
A study of the production of speech sounds in the English language, study and practice in the use of the general American phonetic symbols, practice in phonetic and allophonic transcription, and introduction to the mechanics of voice production.

Cd 110 Anatomy and Physiology of the Speech and Hearing Mechanisms.
Cat. 1. 3 hrs.
Prerequisites: Cd 100.
Normal anatomy and physiology of the speech and hearing mechanisms with emphasis on respiration, phonation, resonance, articulation and audition.

Cd 115 Introduction to Hearing Science.
Cat. I. 3 hrs.
Prerequisites: Cd 105, 110.
Basic information necessary for the field of Audiology; topics include acoustics, frequency and intensity measurements, and anatomy and physiology of the human ear as it relates to the study of hearing.

Cd 120 Speech, Hearing and Language Disfunction in the Classroom.
Cat. 3. 3 hrs.
Prerequisites: none.
Typical symptomatology of speech, language, and hearing disfunction; techniques, and materials for the development of these basic skills will be introduced.

Cd 125 Principles of Teaching the Handicapped.
Cat. 3. 3 hrs.
Prerequisites: none.
Special methods and techniques for teaching the handicapped who have speech and hearing impairments, e.g., cleft palate, deaf, cerebral palsy.

Cd 200 Audiology I.
Cat. I. 3 hrs.
Prerequisites: Cd 115.
Basic acoustics, anatomy and physiology of the human ear, and ear pathologies; introduction to audiometric testing techniques.

Cd 205 Normal Development of Speech and Language.
Cat. 1. 3 hrs.
Prerequisites: None.
An in depth coverage of the normal acquisition and development of speech and language; expressive and receptive language, including phonology, morphology, snytax, and semantics will be covered.

Cd 210 Language Disorders.
Cat. 1. 3 hrs.
Prerequisites: Cd 100, 105, 110, 115, 200, 205.
The processes interfering with normal language acquisition and disorders which disturb established language skills in children and adults; majors only; exceptions need permission of instructor.

Cd 215 Voice and Articulation.
Cat. I. 3 hrs.
Prerequisites: Cd 100, 105, 110, 205.
The etiology, evaluation, diagnosis, and therapetuic procedures will be examined; brief review of the anatomy and physiology of the vocal and articulatory structures; topics include functional, psychological, and organic voice and articulation disorders; each student must be able to do a satisfactory voice and articulation evaluation in order to complete this course.

Cd 220 Feedback Approach to Speech and Pathology.
Cat. 3. 3 hrs.
Prerequisites: Cd 110.
Application of cybernetic principles to speech habilitation; therapy for disorders of language, articulation, voice and rhythm.

Cd 225 Neurological Disorders of Speech.
Cat. 3.3 hrs.
Prerequisites: Cd 100, 105, 110, 105.
Communication difficulties associated with cerebral insult; rehabilitative procedures in speech and language.

Cd 300 Rehabilitation of the Auditorily Impaired.
Cat. I. 3 hrs.
Prerequisites: Cd 100, 105, 110, 115, 200.
Theoretical approach to teaching practices used to improve speech communication for the auditorily impaired; consideration of the impact of hearing impairment on visual and auditory perception of speech; basic orientation to systems of sound amplification and hearing aids.

Cd 305 Rhythm Problems and Allied Disorders of Speech.
Cat. I. 3 hrs.
Prerequisites: Cd 100, 105, 110.
Introduction to major theories of stuttering and associated problems, e.g., cluttering; basic therapeutic procedures for children and adults; required of majors.

Cd 310 Speech Correction – Clinical Practicum I.
Cat. I. 3 hrs.
Prerequisites: Cd 200, 105, 110, 115, 200, 205, 210, 215, 305.
Basic experience in diagnosis and treatment of speech disorders; emphasis upon diagnostic tools, appropriate therapy and/or referral processes; majors only.

Cd 315 Language Therapy for the Deaf and Hard of Hearing.
Cat. I. 3 hrs.
Prerequisites: Cd 100, Cd 200.
Receptive and expressive language acquisition of the auditorily impaired; emphasis on learning disabilities and social disabilities related to hearing impairments; consideration of techniques for appraisal and identification of symptoms and factors associated with language disfunctions.

Cd 320 Clinical Audiology Practicum I.
Cat. 1. 3 hrs.
Prerequisite: Cd 200.
Review of clinical and audiometric techniques; assist with clinical testing of outpatients in the college Speech and Hearing Center; permission of audiologist needed; majors only.

Cd 400 Speech Correction - Clinical Practicum II.
Cat. 1. 3 hrs.
Prerequisites: Cd 310.
Continuation of Cd 310; advanced experiences in diagnositc procedures and appropriate therapies with severe speech disorders of organic, psychological and/or functional etiologies; majors only.

Cd 405 Aural Rehabilitation Practicum.
Cat. I. 3 hrs.
Prerequisites: Cd 300.
Basic experience in management of clients with hearing loss; consideration given to the conservation of residual hearing and techniques of auditory training; clinical practicum with clients provided; permission of aural rehabilitation Faculty needed.

Cd 410 Tests and Measurements in Speech Correction.
Cat. 2. 3 hrs.
Prerequisites: Cd 100, Ed. 285.
General role of diagnosis in speech and hearing therapy: specific consideration of diagnostic tests and procedures used in the diagnosis of speech, language, and hearing disorders.

Cd 415 Organization ofPublic School Speech Programs.
Cat. 2. 3 hrs.
Objectives of speech correction programs; organizational guidelines; individual and group practice.

CD 420 Clinical Audiology - Practicum II
Cat. I. 3 hrs.
Prerequisites: Cd 320.
Advanced experiences with complex audiological problems using current medical and technical research data; emphasis upon data from research as applied to the human ear disorder and its ensuing handicap.

Cd 425 Advanced Audiology.
Cat. I. 3 hrs.
Prerequisites: Cd 420.
Review of standard procedures for audiometric testing; emphasis on complex audiologic testing, problems, and equipment.

CD 430 Hearing Aids.
Cat. I. 3 hrs.
Prerequisite: Cd 425.
Hearing aid construction, methods of patient evaluation, monaural and binaural fittings; ear mold construction and fitting; clinical practicum required in addition to class time.

Cd 500 Independent Study in Communication Disorders.
Cat. I. 1 - 3 hrs.
Prerequisites: Junior and Senior Majors only, with consent of instructor,
The student will pursue an area of special interest in speech pathology or audiology through research or field experience under faculty supervision.

Computer Science

Assistant Professor:
Avedikian, Martell, Mulcahy

A minor in computer science is offered at WSC. The program provides a core of courses which gives a student a strong knowledge of computer science that will complement his training in his major discipline. A minor in computer sciences can provide a student with a variety of job opportunities in computer-oriented fields. The program can also enrich the knowledge of a student who has had previous exposure to computer science in high school.

Minor: For a minor in Computer Science, a student may select any of the below electives totalling 18 credits. A minor may not exceed 24 hours without permission.

ELECTIVES FOR A MINOR IN COMPUTER SCIENCE

Cs 150 Introduction to Computer Science
3 hours
Prerequisites: none
Cs 160 Computer Programming with Fortran IV
3 Hours
Prerequisites: none
Cs 161 Advanced Fortran
3 Hours
Prerequisites: Cs 160
Cs 170 Computer Programming with Cobol
3 Hours
Prerequisites: Cs 150
Cs 171 Advanced Cobol
3 Hours
Prerequisites: Cs 170
Cs 180 Management Data Processing
3 hours
Prerequisites: none
Cs 200 Computer Organization & Assembler Language Programming
3 Hours
Prerequisites: Cs 160 or Cs 170
Cs 400 Independent Study
1-3 Hours
Prerequisites: Permission of Instructor

Ma 440 Introduction to Numerical Analysis
3 Hours
Prerequisites: none

COURSE DESCRIPTIONS

Cs 150 Introduction to Computer Science. Cat. I. 3 hrs.
Prerequisites: none.
Basic computer operation, capabilities, application in such fields as education, and effect on modern society; familiarization with terminology and equipment; programming using the language BASIC: non-technical approach.

Cs 160 Computer Programming with Fortran IV. Cat. 1. 3 hrs.
Prerequisites: none.
Mathematical and scientific problem solving; real and integer arithmetic, input and output statements, control statements, do-loops, basic FORMAT, subscribed variables, subroutines, double precision and character manipulation.

Cs 161 Advanced Fortran. Cat. 2. 3 hrs.
Prerequisites: Cs 160.
Higher level aspects of FORTRAN are considered including advanced programming techniques, common block storage, advanced FORMAT, sequential files, and file manipulation.

Cs 170 Computer Programming with Cobol. Cat. 2. 3 hrs.
Prerequisites: none.
Fundamentals of COBOL programming; application to business-oriented problems.

Cs 171 Advanced Cobol. Cat. 2. 3 hrs.
Prerequisites: Cs 170.
Higher level aspects of COBOL are considered including advanced programming techniques, creating tape and disk files, and the storing, searching, merging, updating, and purging of files.

Cs 180 Management Data Processing.
Cat. 2. 3 hrs.
Prerequisites: none.
Management applications of digital computers; file maintenance.

Cs 400 Independent Study in Computer Science.
Cat. 1. 1-3hrs.
Prerequisite: Permission of the Instructor.

Early Childhood Education

Professor:
Bunuan

Associate Professor:
Stefanini

Assistant Professor:
Meegan, Polito

The Department of Early Childhood Education offers a variety of courses which provide the student with the opportunity of preparing to teach pre-school children in such programs as day care centers, nursery schools, Head Start programs, and kindergartens.

The value of quality child care and early education is acknowledged by authorities throughout the world. Likewise, the competence of those who work with young children is viewed as, perhaps, the most important ingredient of a quality program. This increased awareness of the importance of sound early training, as well as other factors such as the growing number of women entering careers outside the home, is reflected in the demand by all levels of society for child care and early education programs. Standards governing the establishment of such programs and the credentials of personnel have not kept pace with this dynamic situation.

Inasmuch as Worcester has become a growing community of different cultures and minority groups, we feel that these offerings through specialized programs will provide teachers-to-be of young children a thorough and unique preparation for leadership positions within the teaching profession.

Degree Structure

A student completing the major requirements successfully, would receive either a Bachelor of Arts or a Bachelor of Science, depending upon the total number of elective credits. (See B.A. and B.S. Degree Requirements)

GENERAL REQUIREMENTS

General Foundations

a. English Composition	3
b. Physical Education	3
c. U.S. History or Constitution: U.S. and Massachusetts	3
credit hours	9

Distribution

GROUP ONE – Humanities

Literature
Philosophy
History
Foreign Languages
Media
Total: 6 credit hours

GROUP TWO – Social Sciences

Economics
Education
Geography
Political Science
Psychology*
Sociology**
Total: 9 credit hours

GROUP THREE – Fine Arts

Art
Music
Drama
Total: 6 credit hours

GROUP FOUR – Science/Math

Astronomy
Biology
Chemistry
Geology
Mathematics
Physics
Physical Science
Physical Geography
Total: 6 credit hours

* Introduction to Psychology and Child Growth and Development - plus

** Any 100 Sociology course is required from Group Two

MAJOR REQUIREMENTS

The following Early Childhood Education major courses will be required:

Ed 115	Orientation to Early Childhood Education	3
Ed 210	Curriculum Designs for Young Children	3
Ed 315	Creative Experiences in the Curriculum for Young Children	3
Ed 220	Human Interrelationships in Early Childhood Education	3
Ed 300	Early Childhood Educacation, Methods and Materials Core	15
Ed 600	Field Experience in Early Childhood Education	3
Ed 610	Field Experience and Seminar in Early Childhood Education	4
Ed 615	Student Teaching in Early Childhood Education	6
	credit hours	40

The following courses are electives which an Early Childhood Education major may take:

Ed 310	Identification of the Pre-School Child with Special Needs	3
Ed 410	Organization and Supervision of Programs in Early Childhood Education	3
Ed 315	Literature for Young Children	3
Ed 415	Evaluating Children's Progress	3
Ed 420	Approaching Reading with Young Children	3
Ed 425	Language Development and Communication in Young Children	3
Ed 500	Independent Study in Early Childhood Education	3

(Note: No Early Childhood Education major may take more than 3 of these elective courses - 9 credit hours.)

In an attempt to develop a sequential four year program for teachers of pre-school and kindergarten children, the courses proposed below are essential components of a viable program. These have been selected in light of forthcoming state accreditation criteria for Early Childhood Education certification. The program has been designed to provide maximum flexibility. It should provide the student with an opportunity to under-

take a second major or an opportunity to undertake two minors. The student is required to fulfill at least the requirements of one minor area. (18 credit hours.)

EARLY CHILDHOOD MAJOR

A student may undertake a second major in such fields as Spanish, English, History, Psychology, Sociology, Media, Biology, Mathematics, Communications Disorders, etc. This opportunity for two majors would enhance the students' chances in securing employment.

As a freshman, the student will take Orientation to Early Childhood Education (Ed 115). This course will provide the student an opportunity to define Early Childhood Education and to decide if this is the area in which he or she wishes to major. It will also provide the Early Childhood Department with an opportunity to analyze the student, his/her goals, personality, etc., and therefore, act as a screening mechanism.

In the junior year, the student will take the Early Childhood Education Methods and Materials Core for fifteen semester hours. This course will teach all the areas: Language Arts, Readiness and Beginning Reading Skills, Mathematics, Science, Art, Music, Social Studies, Movement, etc. The course will be taught in an integrated manner through a faculty team approach so that the student will be able to envision and experience for him/her self how he/she should teach young children.

Field Experience and Student Teaching

The Field Experience and the Student Teaching programs of Early Childhood Education majors total twelve credit hours. The two programs have been designed to provide students with a variety of educational settings with young children. Students in their Junior year are required to fulfill two sections of three-semester hours each in field experience and students in their Senior year are required to participate in a six-semester-hour Student Teaching program.

Junior year students are expected to carry out their field experience by working in Day Care Centers, Head Start Programs or Nursery Schools. The student may elect to spend part of each day of the week (1½ hours) in a center and the rest of the day in classes at the college, or the student may opt to spend one whole day at a center and the remainder of the week in classes on campus.

Student Teaching for Senior year students involves spending half a day (1 session) in a kindergarten class for a whole semester and the other half day in classes on campus. Student Teaching is required for State certification.

Both programs, Field Experience and Student Teaching have been planned to permit a student to continue work on another major, except for the semester in field experience during the Junior year.

At present, there is no Early Childhood Certification. However, provisions are being made within the program for eventual certification to be established by the Commonwealth. Meanwhile, students majoring in Early Childhood Education qualify for K-8 teaching certification by the State.

Departmental advisors in Early Childhood Education are available to assist students in selecting a second major or two minor areas. Students who are Early Childhood majors must maintain a cumulative average of 2.5 in their major courses and an overall cumulative average of 2.0.

RECOMMENDED FOUR-YEAR PROGRAM IN EARLY CHILDHOOD EDUCATION

FRESHMAN

Fall Semester

Physical Education	1
Orientation to Early Childhood Education	3
English Composition	3
Introduction to Psychology	3
Distribution	3
Elective	3
	16

Spring Semester

Physical Education	1
Sociology	3
Child Growth & Development	3
U.S. History or Constitutions: U.S. and Massachusetts	3
Electives	6
	16

SOPHOMORE

Fall Semester

Physical Education	1
Curriculum Designs for Young Children	3
Distribution	6
Electives	6
	16

Spring Semester

Physical Education	1
Creative Experiences in the Curriculum for Young Children	3
Human Interrelationships in Early Childhood Education	3
Distribution	6
Elective	3
	16

JUNIOR

Fall Semester

Early Childhood Education Methods & Materials Core	15
Field Experience in Early Child-Hood Education	3

Spring Semester

Field Experience & Seminar in Early Childhood Education	4
Electives	12
	16

SENIOR

Fall Semester

Student Teaching in Early Childhood Education	6
Electives	9
	15

Spring Semester

Early Childhood Education Electives	9
Electives	9
	18

Total: 131 Credit Hours

COURSE DESCRIPTIONS

Ed 115 Orientation to Early Childhood Education.
Cat. I. 3 credits.
Prerequisites: none.
Historical and philosophical overview of programs in day care centers, Head Start centers, nursery schools and kindergarten; influence of socio-economic backgrounds; the importance of play in education for young children.

Ed 210 Curriculum Designs for Young Children.
Cat. I. 3 credits.
Prerequisites: Child Growth and Development Ed 115.
Planning programs. physical environment (materials, equipment, arrangement and organization); evaluation of young children through observation as a basis for curriculum planning.

Ed 215 Creative Experiences in the Curriculum for Young Children.
Cat. I. 3 credits.
Prerequisites: Ed 210.
Development and analysis of methods and materials applicable to the young child in day care centers, Montessori schools, Head Start centers, nursery schools, and kindergartens; field experiences in various educational settings with small groups of children.

Ed 220 Human Interrelationships in Early Childhood Education.
Cat. I. 3 hrs.
Prerequisites: Ps 190 Child Growth and Development.
Group dynamics and systems involved in educating the young child in day care centers, nursery schools, Head Start centers and kindergartens.

Ed 300 Early Childhood Education, Methods and Materials Core.
Cat. 2. 15 hrs.
Prerequisites: Ed 115, Ed 210, Ps 190.
Identifying the issues related to the integration of theory and practice focusing on the total social, emotional, academic and physical development of preschool-kindergarten child through a faculty team approach; areas of the curriculum include language arts, movement, music, art, social sciences, natural sciences, mathematics and play theories.

Ed 310 Identification of the Preschool Child with Special Needs.
Cat. I. 3 credits.
Prerequisites: Ps 140 (See Elementary Education Section).
Developing skills for the identification of special needs in a child.

Ed 315 Literature for Young Children.
Cat. 2. 3 hrs.
Prerequisites: none.
Investigation of books and other literature materials for preschoolers; study of effective procedures for reading aloud to youngsters; stimulation of creative activities based upon storytelling and literature; acquaintance with poetry appropriate for early childhood; development of techniques for storytelling and implementation of these methods with groups of young children.

Ed 410 Organization and Supervision of Programs in Early Childhood Education.
Cat. I. 3 credits.
Prerequisites: Ed 610 (below).
Organization of early childhood programs in day care centers, Head Start centers, nursery schools and kindergartens; the necessary supervisory skills needed by those evaluating programs and teachers.

Ed 415 Evaluating Children's Progress.
Cat. 2. 3 hrs.
Prerequisites: Ed 210.
Understanding and interpretation of the results of psychological and educational tests applicable for use with young children of preschool age; seminar and discussions of children in a variety of child care settings; special emphasis placed on giving teachers insights to children based on behavioral observations.

Ed 420 Approaching Reading with Young Children.
Cat.
Prerequisites:
Overview of the reading process; basic reading readiness skills and strategies for teaching these; initiating beginning reading procedures for children who are ready to read; implementing reading and reading readiness programs with young children.

Ed 425 Language Development and Communication in Young Children.
Cat.
Prerequisites:
Role of teaching in guiding young children in learning language; sequence of skills in devleoping vocabulary, speaking, listening, and writing competencies; examination and utilization of materials and teaching strategies to foster communicative skills.

Ed 500 Independent Study in Early Childhood Education.
Cat. 2. 3 hrs.
Prerequisites: upperclassmen.
For students wishing to pursue independent study in a specialized area of early childhood education; greater understanding and appreciation of early childhood should result; faculty members from other disciplines may be called in to counsel the student in resources and approaches.

Ed 600 Field Experience in Early Childhood Education.
Cat. I. 3 hrs.
Prerequisites: To be taken concurrent with Ed. 300.
Actual teaching experience in an approved day care center, Head Start center, or nursery school.

Ed 610 Field Experience and Seminar in Early Childhood Education.
Cat. 2. 4 hrs.
Prerequisites: Ed 600.
Field Experience in an approved day care center, Head Start Center, or nursery school.

Ed 615 Student Teaching in Early Childhood Education.
Cat. I. 6 hrs.
Prerequisites: Ed 600 and Ed 610.
Actual teaching experience in a kindergarten classroom.

Economics

Professor:
Choi

Associate Professor:
Kelley

Assistant Professor:
Trimby

The department of Economics offers a major program for those students who wish to prepare for professional careers as economists in various government agencies, non-profit and industrial organizations, and in academic institutions. Although the major will find job opportunities in the state and federal government or business with an undergraduate degree in economics, it is frequently necessary to obtain additional training to fully qualify as a professional economist. The major program is designed to prepare students for such advanced study.

Many students will wish to prepare for immediate business or public careers after college. Economic majors with these interests may acquire additional preparation through a major or minor program in such fields as Management or Political Science. Department advisors can offer guidance to the student in the selection of programs most suited to his or her career objectives.

Because of the many intricate economic problems in contemporary society, students majoring in other fields such as history, political science, geography, and sociology or in special programs like Urban Studies, may wish to supplement their preparation in these specialties with a study of related economics offerings. The student may consult the minor program in economics for a suggested sequence which can be altered to meet individual interests. Similarly student who are preparing to become elementary or secondary school teachers and who will be responsible for the social science or economic education of students may strengthen their training with an appropriate sequence of economics courses.

ECONOMICS MAJOR REQUIREMENTS

The major program requires a minimum of 30 semester hours credit and must include the following courses: Intro. to Macroeconomics and Microeconomcis, Macroeconomics, Microeconomics, and Statistics. The remaining 15 or more hours may be chosen from economics electives in accordance with special interests and career objectives. Students preparing for graduate study in economics or related fields should acquire additonal credits in quantitative economics courses. Students who intend to major in economics should complete their general education requirements as early as possible in their collegiate program and normally begin their major program no later than their sophomore year.

Economics Minor Requirements

The minor program requires Intro. to Macroeconomics and Intro. to Microeconomics and any other four economics courses for which prerequisites are met. Faculty advisors will assist students in selecting a minor program which coordinates well with their other major or minor courses of study.

RECOMMENDED PROGRAM FOR ECONOMICS MAJORS (B.A./B.S.)

FRESHMAN

Fall Semester

Intro. to Macroeconomcs

Spring Semester

Intro. To Microeconomics

SOPHOMORE

Fall Semester

Macroeconomics

Spring Semester

Microeconomics
Statistics

JUNIOR

Fall Semester

Economics Elective
Economics Elective

Spring Semester

Economics Elective
Economics Elective

SENIOR

Fall Semester

Independent Study in Economics or Internship in Economics

Spring Semester

Seminar

COURSE DESCRIPTIONS

Ec 100 Introduction to Macroeconomics.
Cat. 1. 3 hrs.
Prerequisites: none

Ec 101 Introduction to Microeconomics.
Cat. I. 3 hrs.
Prerequisites: none.

Ec 100 - An introduction to economic analysis with particular emphasis upon the national problems of achieving and maintaining full employment, general price stability and growth of the American economy through time.

Ec 101 - An introduction to the operation of the American market system and to the behavior of its participants whether consumers, producers, the government, or other nations engaged in international trade with the United States.

Ec 102 Consumer Economics.
Cat. I. 3 hrs.
Prerequisites: none.
An in-depth study of personal and family economics, of obtaining income, buying wisely, consumer borrowing, saving, and financial investment; the growing consumer protection and consumer legislation movements will be specifically emphasize.

Ec 200 Macroeconomics.
Cat. I. 3 hrs.
Prerequisite: Ec 100.
An intermediate analysis of the determination of the level and growth of national income and employment; special attention given to the problems of inflation and recession and to the national fiscal and monetary policies designed to maintain full employment and stable price levels.

Ec 201 Microeconomcs.
Cat. I. 3 hrs.
Prerequisites: Ec 101.
An intermediate level treatment of the theory of market pricing in a private enterprise system as it affects the resource and output decision of firms and industries under various market structures and the behavior of consumers.

Ec 202 Labor Economics.
Cat. 2. 3 hrs.
Prerequisites: Ec 101.
A study of the process of wage determination in a market economy; consideration given to the evolution of union organization and collective bargaining affecting wages, hours, working conditions and grievance procedures for labor.

Ec 203 Government Policy Towards Business.
Cat. 2. 3 hrs.
Prerequisite: Ec 101.
An analysis of the problems of competition and monopoly, especially as they affect concentration of economic activity and market power in the American industrial structure; emphasis is placed upon government policy to maintain or regulate competition in the interest of public welfare.

Ec 204 Comparative Economic Systems.
Cat. 2. 3 hrs.
Prerequisites: Ec 100 and Ec 101.
A comparative study of the theory, institutions, and problems of advanced economic systems and their historical background; particular attention given to capitalism, socialism, fascism and communism.

Ec 205 Monetary Economics.
Cat. 2. 3 hrs.
Prerequisites: Ec 100.
The historical and theoretical development of the American monetary system of commercial banks and financial intermediaries; emphasis on the role of monetary controls and policy as partial solutions to full employment, price stability, and economic growth problems.

Ec 206 Urban Economics.
Cat. 2. 3 hrs.
Prerequisites: Ec 100.
The theory and policy of the growth and development of metropolitan areas; some of the policy-related problems discussed are poverty, residential and commercial land use, and traffic congestion.

Ec 207 Statistics.
Cat. 1. 3 hrs.
Prerequisite: For majors only.
Basic tools of statistical analysis appropriate to research in the social sciences; topics include measures of central tendency, hypotheses testing, time series, index numbers, regression and correlation.

Ec 300 Industrial Revolutions.
Cat. 3. 3 hrs.
Prerequisites: Ec 100, Ec 101.
A comparative study of the industrialization of various countries beginning with the first industrial revolution in England and including the indusdtrialization of other European nations and Japan; these historic cases of industrialization will be examined in terms of modern economic development and any implication for presently underdeveloped economies.

Ec 301 Economic Development.
Cat. 2. 3 hrs.
Prerequisites: Ec 100, Ec 101.
A survey of contemporary economic theories concerning less developed countries; social, cultural, and political forces shaping the development of such countries are also investigated.

Ec 302 Development Planning and Regional Economics.
Cat. 2. 3 hrs.
Prerequisites: Ec 100, Ec. 101.
Starts with a survey of some of the problems that must be dealt with by less developed countries in planning their economic development; case studies are used; second part of the course deals with theories of regional economics applicable to both developed and less developed economies.

Ec 303 Radical Thought and The American Economy.
Cat. 3. 3 hrs.
Prerequisites: Ec 100, Ec 101.
Radical critiques, especially Neo-Marxist ones, of corporate power, unemployment and inflation, and how the maldistribution of wealth and income are becoming more prevlanet; how these forces influence U.S. Government economic policies or pose alternatives will be a major part of this study.

Ec 304 Economics of the Environment.
Cat. 3. 3 hrs.
Prerequisites: Ec 101.
After looking at the scope and nature of the problems involved, the course considers the following topics: methods of pollution control and the socio-economic problems caused by pollution, current research on ecology and economics, and the impact that limits on pollution may have on income and population growth.

Ec 305 Introduction to Math Economics.
Cat. 2. 3 hrs.
Prerequisite: Ec 100.
A survey of some basic mathematical techniques appropriate to the analysis of economic models and application of economic theory.

Ec 306 Introduction to Econometrics.
Cat. 2. 3 hrs.
Prerequisites: Ec 100. The application of statistical techniques to the varification of economic models and examination of problems.

Ec 400 International Trade.
Cat. 3. 3 hrs.
Prerequisites: Ec 100, Ec 101.
This course will investigate the reasons why nations gain by spatial specialization and exchange with other countries. It includes an analysis ofthe mechanism by which international disequilibrium is restored to a new equilibrium and a study of trade and foreign exchange policies.

Ec 401 Public Spending and Taxation.
Cat. 2. 3 hrs.
Prerequisites: Ec 100, Ec 101.
An analysis of government spending, revenue sharing, and taxation; includes the impact of government spending upon efficient use of resources and national growth.

Ec 500 Independent Study in Economics.
Cat. 3. 1-3 Hrs.
Prerequisites: Ec 101 and permission of instructor.
A specifically designed course for the student whose needs cannot be fully met by available offerings; actual arrangements to be made between student and professor; not intended for general enrollment; a limit of six semester hours can be acquired.

Ec 501 Seminar.
Cat. 3. 3 hrs.
Prerequisites: Permission of Instructor.
A research and discussion process intended to summarize and provide some career orientation to the undergraduate preparation of the economics major at the Senior class level.

Ec 600 Internship in Economics.
Cat. 3. 1-12 hrs.
Prerequisites: advanced standing in major in economics, high achievement, and the consent of the staff coordinator.
Students will gain practical experience in economic analysis with industry and non-profit organizations and government agencies; internships may be of varying length depending upon the project undertaken; close supervision of the inern will be provided by the agency supervisor and staff coordinator working in concert; the project or program will take into account the student's interest and capabilities and the needs of the organization where the intern is placed; interns must complete any program undertaken and will be subject to a joint evaluation by the agency supervisor and staff coordinator.

Elementary Education

Professor:
Griffiths, Quint

Associate Professor:
Joseph, Lewicke, O'Neil, Pilon, Scanlon

Assistant Professor:
Burns, Desrosiers, Fraumeni, Geer, Harris, Johnson

The Department of Elementary Education offers a preparation for teaching in the elementary school. This major program has been designed to meet the requirements of the Bureau of Teacher Certification and Placement of the Massachusetts Department of Education. A graduate of the Elementary Education program is certified to teach in Kindergarten through Grade 8 in the Commonwealth of Massachusetts. Elementary Education program at Worcester State will also have met the requirements for certification in 31 other states.

Provision has been made in the major curriculum for students to have two majors by using their academic minor and their electives for their second major. The Bi-Lingual Program for Elementary School teachers is offered in conjunction with the Foreign Language Department.

The Elementary Education program is accepted in other related fields such as business, industry, social service.

ELEMENTARY EDUCATION MAJOR

General Foundation

English Composition	3
Physical Education	3
History *	3
	9

** History must be chosen from U.S. History I; U.S. History II; or Constitutions: U.S. and Massachusetts.*

General Distribution

English/Literature	6
Laboratory Science	6

Social Science/Philosophy (excluding Psychology)	6
Mathematics	3
Art or Music	3
Principles of Effective Speech	2
General Psychology I	3
Child Growth and Development	3
credit hours	32

Major Requirements

Introduction to Teaching and Learning I and II	6
Methods and Materials: Block I (Mathematics, Science, Social Studies)	9
Methods and Materials: Block II (Reading Language Arts, Children's Literature	9
Educational Psychology	3
Student Teaching I and II	12
	39

Specialized Professional Education

12 semester hours (see following pages for details)

Minor in an Academic Area

18 semester hours (see following pages for details)

Electives

17 semester hours. (see following pages for more detail).

Total Credits

The number of semester hour credits necessary to fulfill the credit requirements for graduation is 128 semester hours. The student must not take more than 60 hours in education.

Specialized Professional Education

The student must elect 12 semester hours from one area of 12 semester hours from among the following areas.

Final decisions on the selection of courses should be determined after consultation with the student's faculty advisor. The Registrar's materials should be consulted for each semester. The following courses are suggested for each of the Specialized Professional Education areas.

Communication Disorders

Speech Pathology
Anatomy and Physiology of the Speech Hearing Mechanism
Phonetics
Normal Development of Speech and Language

Early Childhood Education

Orientation to Early Childhood Education
Curriculum Designs for Young Children
Creative Experiences in the Curriculum for Young Children
Organization and Supervision of Programs in Early Childhood Education

Elementary Education

History and Philosophy of Education
Educational Measurement and Evaluation
An Introduction to Linguistics for Elementary Teachers
Problems of Instruction in Elementary School Science

Media/School Library Science

MEDIA/AUDIO-VISUAL

Introduction to Screen Education
Media of Communication

MANAGEMENT

Problem Solving in Organizations I & II

Photography and Learning Materials
Preparation of Inexpensive Instructional Media

SCHOOL LIBRARY SCIENCE

Library Skills in the Elementary School
Media of Communication
Introduction to Reference Sources
Cataloging and Organizing Learning Materials
Learning Resources for Children
Administration for the School Learning Resources Center
Librarian and Media Specialist in the Modern School

PHYSICAL EDUCATION

Physical Education in the Elementary School
Dance in the Elementary School
Gymnastics in the Schools
Creative Movement and Interrelated Arts
Movement Education

Physical Education/Recreation for Special Populations
Field Experience in Physical Education (Elementary)

Reading

Current Trends in the Teaching of Reading
Diagnostic and Remedial Techniques in Reading for the Regular Classroom
Reading in the Open School
Reading in the Inner City School
Reading in the Secondary School

Special Needs

Introduction to Children with Special Needs
Assessment of Children with Special Needs
Prescriptive Techniques and Materials for Children with Special Needs
Materials for Children with Special Needs
Seminar: Children with Special Needs

Urban Education

Urban Education
Education and Race Relations
Creative Thought and the Minority Experience
The Educator and Cultural Diversity
Social Action Education Practicum

No more than 60 semester hours may be taken in education courses.

MINOR IN AN ACADEMIC AREA IN THE ELEMENTARY EDUCATION MAJOR

18 Semester Hours

The student must choose a Minor in an Academic area. This may be expanded to a double Major by the use of elective credits. The student is reminded that he must consult the college catalog for the requirements of the second Major or Minor as stipulated by the specific department. Consultation with the student's faculty advisor or with the Academic Advisor for the Elementary Education Department is advised.

MINORS: Art Biology, Chemistry, Computer Science, Dramatics (See Media), Economics, English, French, Georgraphy, German, History, Learning Disabilities, Mathematics, Media, Music, Natural Science, Philosophy, Physics, Political Science, Psychology, Sociology, Spanish, Special Needs, Theatre, Urban Studies.

ELECTIVES

17 Semester Hours

The 17 semester hours of elective courses should provide the individual with the opportunity for several choices:

1. To add to a Minor and thus change the Minor to a second Major.
2. To follow an area of particular interest to the individual.
3. To meet a special need or remedy a deficiency in the person's academic or professional background.
4. To explore a new area or to enjoy a course, just for fun.
5. To have a second Minor.

BI-LINGUAL PROGRAM

A Bi-Lingual Program for Elementary School Teachers offered by the Elementary Education and Foreign Language Departments to provide teachers for the bi-lingual program in Massachusetts school system. The program has been designed to meet the needs of children, kindergarten through Grade 8.

Students must apply for admission to the program in accordance with the individual's language background individualized program will be drawn up. It is expected that students with a facility in Greek, Spanish or Italian will constitute the majority in the bi-lingual program. However, other languages will be considered. Students will have a double major. Students who already have fluency in the language may take a proficiency test to establish establish their competence.

SAMPLE PROGRAM: For students who wish to prepare themselves to work with Spanish speaking children.

B.S. IN EDUCATION ELEMENTARY EDUCATION MAJOR

PLAN A (Grades 2 through 6) (Suggested Program)

FRESHMAN

Fall Semester

English Composition	3
Physical Education	1
General Distribution and/or History*	9
Academic Minor	3
	16

Spring Semester

Physical Education	1
Intro. Tchg. & Lrng. I	3
General Distribution and/or History* and/or Academic Minor and/or Elective	12
	16
	32

SOPHOMORE

Fall Semester

Physical Education	1
Intro. Tchg. / Lrng. II	3
General Distribution and/or Academic Minor and/or Elective	12
	16

Spring Semester

Block I, Methods and Materials (Math, Sci., Soc. St.)	9
General Distribution and/or Academic Minor and/or Elective	9
	18
	34

JUNIOR

Fall Semester

Block II, Methods & Materials (Rdg. Lang. Arts, Ch. Lit.)	9
Academic Minor and/or Spec. Prof. Educ. and/or Elective	9
	18

Spring Semester

Student Teaching I	6
Student Teaching II	6
	12
	30

SENIOR

Fall Semester

Academic Minor and/or Spec. Prof. Educ. and/or Electives	15
Educational Psychology	3

Spring Semester

Academic Minor and/or Spec. Prof. Educ. and/or Electives	15
	33
Total	128

*History must be chosen from U.S. History I; U.S. History II; American Government; U.S. Constitutional History; or Constitutions: United States and Massachusetts.

N.B. A student must not exceed 60 semester hours in Education.

B.S. IN EDUCATION ELEMENTARY EDUCATION MAJOR

PLAN B

(Grade K through 6; all students who plan to do their Student Teaching in either Kindergarten or Grade 1 should follow this plan.)

FRESHMAN

Fall Semester

English Composition	3
Physical Education	1
General Distribution and/or History *	9
Academic Minor	3
	16

Spring Semester

Physical Education	1
Intro. Tchg. & Lrng. I	3
General Distribution and/or History* and/or Academic Minor and/or Elective	12
	16
	32

SOPHOMORE

Fall Semester

Physical Education	1
General Distribution and/or Academic Minor and/or Elective	15
	16

Spring Semester

Intro. Tchg. & I rng. II	3
General Distribution and/or Academic Minor and/or Elective	15
	18
	34

JUNIOR

Fall Semester

Block I, Meth. & Materials (Math, Sci., Soc. St.)	9
Academic Minor and/or Spec. Prof. Educ. and/or Elective	9
	18

Spring Semester

Block II, Meth. & Materials, (Rdg. Lang. Arts.Ch. Lit.)	9
Academic Minor and/or Spc. Prof. Educ. and/or Elective	6
	15
	33

SENIOR

Fall Semester

Student Teaching I	6
Student Teaching II	6
	12

Spring Semester

Academic Minor and/or Spec. Prof. Educ. and/or Electives	15
Educational Psychology	3
	18
	30
Total	128

N.B. A student may not exceed 60hrs. in Education.

SPANISH

Spanish 101 and 102
Fundamentals of Spanish

Spanish 101 and 111
Intermediate Spanish
(conversational approach)

Spanish 201 and 202
Spanish Composition

Spanish 240
Spanish American Literature

Spanish 220
Readings in Spanish Literature

Spanish 320 and 321
Hispanic World
33 CREDITS

EDUCATION

Introduction to Teaching and Learning I & II	6 credits
Block I - Math, Science and Social Studies	9 credits
Block II - Reading, Language Arts, Children's Lit.	9 credits
Education Psychology	3 credits
Methods and Materials in Bi-Lingual Education	3 credits
Student Teaching (one-half to be done in Bi-Lingual Classroom	12 credits
	42 credits

SUGGESTED SPECIALIZED PRO–FESSIONAL EDUCATION

Special Needs
English as a Second Language
Reading

Urban Education
Multi-Cultural Education

SUGGESTED FREE ELECTIVES

Educational Measurement and Evaluation
Art in the Elementary School
Music in the Elementary School
Latin American History
Caribbean Literature
Social Action Practicum

For Admission, please see: Mr. Vincent de Benedictis, Foreign Language. Dept. S305: Dr. Catherine Quint, Elementary Education Dept. S213B: Miss Kathleen Burns, Chairwoman, Elementary Education Dept., A210.

SPECIAL NEEDS MINOR

A minor in Special Needs possible but does not take the place of the Academic Minor. The Special Needs minor would be a second minor.

The Special Needs Minor would consist of the following:

1. Four Basic Courses

Ed 258 Introduction to Children with Children with Special Needs
Ed 348 Assessment of Children with Special Needs
Ed 350 Prescriptive Techniques and Materials: for Children with Special Needs
Ed 536 Seminar: Children with Special Needs

2. Electives: Two Additional Electives To Be Chosen From The Following Areas:

Education

Ed 372 Educational Measurement and Evaluation
Ed 436 Diagnostic and Remedial Techniques in Reading for the regular class.
Ed 375 Identification of Pre-School Child with Special Needs
Ed 435 The Slow Learner in the Elementary School
Ed 349 Education of the Gifted
Ed 455 Diagnostic and Remedial Techniques in Secondary Reading
Ed 335 Reading in the Elementary School
Ed 373 Urban Education
Language Development and Communication in young children

Sociology

So 200 Contemporary Social Problems
So 204 Sociology of Deviance
So 207 Sociology of the Family
So 208 Juvenile Delinquency

Communication Disorders

Cd 120 Speech, Hearing and Language Dysfunction in the Classroom
Cd 205 Normal Development of Speech and Languages

Psychology

Ps 240 Abnormal Psychology
Ps 280 Psychology of Learning
Ps 320 Psychology of Subnormal and Unadjusted Children
Ps 340 Psychology of the Culturally Deprived

ADMISSION TO THE PROGRAM

Advisement – All faculty members must serve as Faculty Advisors. Assignment of advisees will be made by the Academic Advisor of the Elementary Education Department. Any questions relative to the assignment must be cleared with the Academic Ad visor. On request, a student may indicate his or her choice of Advisor. Faculty members may request the assignment of an advisee.

Students are assigned to their Advisors at the beginning of the Freshman year and work with these Advisors throughout their college careers at Worcester State College. In addition, the Academic Advisor for the Elementary Education Department (Room 210, Administration Building) is available at any time to assist students with academic problems.

Each transfer student will be assigned a Faculty Advisor after consultation with the Academic Advisor of the Elementary Education Department.

II. Transfer Students – Each transfer student must have a personal interview with the Academic Advisor of the Elementary Education Department bringing with him a transcript of all courses completed during the period of his college education. An evaluation of his transfer credits will be made and a program will be developed with the Academic Advisor. Transfer students will conform to conditions of advisement stated in Section I.

III. Admission to and Retention in Student Teaching. During the semester immediately preceding student teaching, students will make application for student teaching with the Office of Professional Experiences.

A list of prospective student teachers will be circulated to the members of the Elementary Education Department faculty through the department chairman for evaluation of the suitability of the individual students for student teaching.

The standards applied for the college to sponsor a student in an elementary school as a student teacher are:

Academic Achievement – (1) 2.0 cumulative grade point average, (2) successful completion of professional education courses prerequisite to student teaching, and (3) 2.3 overall average in required professional education courses.

PHYSICAL HEALTH – (1) students must provide proof of the absence of tuberculosis, and (2) this evidence must be filed with the college nurse.

MENTAL HEALTH – Students must be emotionally stable and show evidence of good mental health.

LANGUAGE AND SPEECH PATTERNS – The Communication Disorders Department must indicate that the students give evidence that they have a knowledge and skill in proper English usage necessary to serve as models for children.

PERSONAL AND SOCIAL CHARACTERISTICS – Students must possess the qualities that schools consider related to teaching success, such as responsibility, dependability, resourcefulness, ability to work with others, etc. This evidence will be obtained from Evaluation forms completed by professors who use field experiences as part of their courses, and from departmental screening prior to student teaching.

PROFESSIONAL ETHICS – students must exhibit through their behavior the sense of ethics essential to the professional teacher. Evidence will be obtained as explained under Personal and Social Characteristics (above).

If more than one faculty member indicates reservations concerning possible fitness, the case will proceed to further consideration by the Committee for Student Teaching and the faculty member indicating concern.

The Committee for Student Teaching will consist of the Director of Professional Experiences, who will serve as chairman of the committee, three (3) elected faculty members and the Chairman of the Department, ex officio. The responsibilities of this committee will include: (1) Investigation of any questionable applicants for student teaching and making a decision pursuant to admittance to student teaching, (2) continuous evaluation during student teaching, and (3) act as a clearing house for problems which arise during student teaching.

The student under consideration has the option of having a student from the Student Advisory Committee serve on this committee.

As soon as possible after the meeting of the Committee for Student Teaching, the student will be notified of the decision of the committee and informed that if he wishes to appeal, he must do so no later than one week from the date of his receipt of the notification.

APPEAL – If a student desires to appeal a decision, a meeting of the Appeal Committee will be arranged. The Appeal Committee will consist of the Associate Dean of Education, who will serve as chairman; the Director of Professional Experiences, the Chairman of the Department, the Academic Advisor (Elementary Education), and one faculty member of the student's choice.

FOLLOW-UP OF STUDENTS IDENTIFIED AS HAVING PROBLEMS – Special attention will be given to the placement of these students in teaching situations by the Dir-

ector of Professional Experiences. Consultation by the Director of Professional Experiences with the college supervisors, concerning a student's area(s) of weakness will be held. Periodic follow-ups by the supervisor will be made of a student having problems. Communication by the college supervisor and the cooperating teacher will be made concerning students in difficulty.

SEVERANCE OF A STUDENT FROM THE PROGRAM – In the event of continued problems of a student, a conference will be arranged between the student, the college supervisor and the cooperating teacher. Recommendation will be made to the Director of Professional Experiences for counseling and/or action. If a student desired to appeal the action, the same procedure as outlined above will be followed.

COURSE DESCRIPTIONS

Ed 135 Introduction to Teaching and Learning I.
Cat. I. 3 credits.
Prerequisite: Ps 190.
An over-view of the theoretical and practical dimensions of the field of elementary education: classroom and curriculum structure, community relations, current problems in education and professional ethics; field experiences through a program of observation and volunteer participation are provided.

Ed 170 Introduction to Modern Education.
Cat. 2. 3 credits.
Not for the Education major or minor; designed to acquaint and inform the citizen, taxpayer, and prospective parent about education in today's society; all levels of education studies from pre-school through adult education; contemporary problems at the local, state, and national levels overviewed; additional information will be provided for the student who may be contemplating education as a major or minor but is not sure of himself or of the field to make a choice or commitment.

Ed 235 Introduction to Teaching and Learning II.
Cat. I. 3 credits.
Prerequisite: Ed 135 Introduction to Teaching and Learning I.
Continuation of the systematic development of the student's understanding of teaching and learning; in-depth study of general teaching procedures and a comparison of curriculum patterns and learning experiences; and understanding of self in relation to a career decision in the field of education and related areas. Field experiences. Observation and participation is a requirement.

Ed 236 Art in the Elementary School.
Cat. I. 3 credits.
Prerequisites: Consult Art Department.
The place and function of art in the elementary school; contemporary practices through laboratory experiences.

Ed 237 Music in the Elementary School.
Cat. I. 3 credits.
Prerequisite: Introduction to Music.
The child voice; selection and presentation of rote songs: guiding growth in rhythmic, notational, and listening experiences; survey of music books and materials.

Ed 238 Introduction to Children with Special Needs.
Cat. 1. 3 hrs.
Prerequisites: Ps 190.
A course in Special Needs (Learning Disabilities), designed to orient prospective teachers in the many faceted problems of children with special needs; consideration given to discrepancies in each area of deviation.

Ed 335 Reading in the Elementary School.
Cat. I. 3 credits.
Intensive overview of the basic reading skills; effective teaching strategies; utilization of multi-media in reading instruction. Prerequisite to student teaching.

Ed 336 Children's Literature.
Cat. I. 3 credits.
A study of the many facets of literature for children and criteria for the selection of each; techniques of preparation and use in the classroom are discussed.

Ed 337 Language Arts for Primary Grades.
Cat. I. 3 credits.
The inter-relatedness of the language arts; functional ways of working with young children; creative development of critical thinking; exploration of new media.

Ed 338 Language Arts in the Elementary School.
Cat. I. 3credits.
The functional and creative aspects of oral and written expression; development of language power in relation to child growth.

Ed 339 Mathematics in the Elementary School.
Cat. I. 3 credits.
Techniques for teaching arithmetic in the modern elementary school; emphasis on material development and classroom evaluation of both materials and techniques. Prerequisite to student teaching.

Ed 340 Social Studies in the Elementary School.
Cat. I. 3 credits.
The aims, methods, and materials involved in teaching social studies with emphasis on the unit and inquiry approaches, media and evaluation. Prerequisite to student teaching.

Ed 341 Science in the Elementary School.
Cat. I. 3 credits.
Description of science in the elementary school; objectives, curriculum, materials, current practices, trends in science teaching. Prerequisite to student teaching.

Ed 342 Career Education in the Elementary School.
Cat. I. 3 credits.
Career education in the elementary school; awareness, concepts, objectives, exploration and evaluation of career education presented and discussed; content of course to include speakers, projects, interest centers, and field contacts in the world of work.

Ed 343 Library Skills in the Elementary School.
Cat. I. 3 credits.
For description see Me 305.

Ed 344 Methods and Materials, Block I — Mathematics, Science, Social Studies.
Cat. I. 9 credits.
Prerequisites: General Psychology, Child Growth and Development, Introduction to Teaching and Learning I and II.

The concepts, attitudes, values, objectives, curriculum, materials and media of the 3 subject areas with a stress on the similarities and uniqueness of each area.

Ed 345 Methods and Materials, Block II — Reading Language Arts, Children's Literature.
Cat. I. 9 credits.
Prerequisites: General Psychology; Child Growth and Development, Introduction to Teaching and Learning I and II.

Topics to be included in the three subjects involved: the current status of the subject; the spiral of skills development through the grades; selection, demonstration and evaluation of teaching techniques and materials; creative development of effective teaching strategies and materials; evaluative criteria and procedures; adapting learning experiences for the wide range of pupil differences at various levels.

Ed 346 An Introduction to Linguistics For Elementary Teachers.
Cat. I. 3 credits.
A background in linguistics; history and structure of the language; use of current texts with linguistic approaches to language.

Ed 347 Problems of Instruction In Elementary School Science.
Cat. I. 3 credits.
Prerequisites: Ed 344, or consent of Instructor.
Analysis of current practices; identification of problems; adaptation of available materials, resources consistent with existing science curricula.

Ed 348 Assessment of Children with Special Needs.
Cat. I. 3 hrs.
Prerequisite: Ed 238.
Considers the psychological and educational deficiencies of children with special needs, through educational diagnosis; students will administer and interpret formal and informal tests to synthesize their results with available clinical information to build a clear behavioral picture of learning functions in the child with special needs.

Ed 349 Education of the Gifted.
Cat. 1. 3 credits.
Prerequisites: Child Growth and Development, or Psychology of Adolescence; Junior and Senior education majors and minors.
The identification, characteristics and personality factors of the gifted; the teacher's role and various organizational patterns; innovative procedures and techniques to nurture creativity.

Ed 350 Prescriptive Techniques and Materials For Children with Special Needs.
Cat. I. 3 hrs.
Prerequisites: Ed 238; Ed 348.
Focus on teacher competencies for examining and devising methods and materials for the child with special learning needs; application of the diagnostic information will be related to the child's unique approach to learning.

Ed 351 Creative Thought and Minority Experience.
Cat. I. 3 credits.
Provides opportunities for students to discover, explore, evaluate, appreciate and collate examples and illustrations of creative expression in verbal forms as they are related to the minority experience in America.

Ed 370 Educational Psychology.
Cat. I. 3 credits.
Prerequisite: General Psychology I. Upper classmen.
Learning and developmental processes, motivation, retention, relationships of intelligence and achievement, creativity, personality, affective aspects of learning. Emphasis on research findings in the area of teaching-learning.

Ed 371 History and Philosophy of Education.
Cat. I. 3 credits.
Contemporary problems of education in relation to selected ancient, medieval, and modern philosophers of education.

Ed 372 Educational Measurement and Evaluation.
Cat. I. 3 credits.
Study, construction, and evaluation of instruments in education; interpretation of data; criteria for selection and evaluation of behavioral objectives and standardized tests.

Ed 373 Urban Education.
Cat. I. 3 credits.
Development of understanding of the social, psychological, and educational problems of the culturally different; strategies and techniques for teaching in the inner-city; practicum.

Ed 374 Education and Race Relations.
Cat. I. 3 credits.
The role of education in the promotion of interracial understanding; study of Black American and American Indian — their social and intellectual contributions of the culturally different to contemporary society.

Ed 375 Methodology and Practice in Bi-Lingual Education.
Cat. I. 3 credits.
Introduction to the problems and methods of teaching subject matter to students whose native language is other than English. Attention will be given to the social and cultural environments in which bi-lingual education takes place. Extensive use will be made of role playing and observation of actual bi-lingual classes in the surrounding community.

Ed 376 Classroom Techniques for the Special Needs Child with Social and Emotional Problems.
3 credits.
A consideration of behavioral and classroom management, including applied behavior analysis, contingency management, behavior modification, the group process, counseling and other therapeutic techniques for use with the special needs child with social and emotional problems. A consideration will be made of the development of individualized educational plans for these children.

Ed 435 The Slow Learner in the Elementary School.
Cat. I. 3 credits.
Diagnostic and remedial measures studies, analyzed and applied to the slow learner (IQ 70 to 90) in the elementary school; curriculum content and innovative methodology in the light of current psychological findings.

Ed 436 Diagnostic and Remedial Techniques in Reading for the Regular Classroom.
Cat. I. 3 credits.
Prerequisites: Ed 345 and Ed 635, 636.
Evaluation instruments and procedures; techniques for removing deficits; tutoring a disabled reader(s); writing a case report.

Ed 437 Theoretical and Practical Foundations of The Open Classroom.
Cat. I. 3 credits.
Prerequisite: Ed 635, Ed 636, or tutoring experience.
Theoretical and practical aspects of the open classroom.

Ed 438 Community Resources for Children in the Elementary School.
Cat. I. 3 credits.
Prerequisites: Upperclassmen.
Primarily for elementary teachers to survey programs and resources available in the community, the state, and at national levels; social and family services; health, medical, and mental health facilities; recreational and leisure time services; consideration of methods of using these services and resources; consideration of new concepts in health care and juvenile programs; field experience.

Ed 439 The Community School Concept.
Cat. I. 3 credits.
Prerequisites: Upperclassmen or consent of instructor.
A basic introduction to the community school and the concept of community education; involves various structures and strategies in bringing the local school constituency into the process of education; the rationale of the necessity of public involvement is included.

Ed 465 Reading and the Open School.
Cat. I. 3 credits.
Prerequisite: Ed 345.
A review of learning style and scheduling instruction in an Open School; examines literature on how reading is taught in the English and American Open School; techniques of teaching adapted to learning modalities: the room environment as it affects learning to read; pros and cons of learning to read in an Open School, with a review of the available research.

Ed 470 Creative Problem Solving.
Cat. I. 3 credits.
Utilizing Piaget's three basic periods of operation (preoperational, concrete and formal) in assisting the prospective teacher to become aware of the means by which the child expands his perception of the world; experiencing the concrete ways the child develops awareness of problems, and thereafter goes about solving those problems.

Ed 471 Principles of Guidance.
Cat. I. 3 credits.
Prerequisite: Juniors and Seniors only.
The role of guidance and counseling in the school and the teacher's responsibilities as a functioning member of the guidance staff.

Ed 472 Teaching for Creativity.
Cat. I. 3 credits.
Basic theories of creativity; classroom structures most suited for creative learning; devices used for measurement of this construct, and pertinent research within the last decade; designed for students interested in teaching at the elementary and secondary levels.

Ed 473 The Educator and Cultural Diversity.
Cat. I. 3 hrs.
To enable the educator to better understand the roots of the culturally diverse expression found in today's classrooms, and to recognize the aesthetic, historical, contemporary, idealogical and societal forces which are responsible for the expression of these differences. Emphasis will be given to the contributions of American Indians, Chicanos, and Puerto Ricans on the contemporary scene as well as to the American heritage.

Ed 474 Current Trends in the Teaching of Reading
Cat. I. 3 credits.
Prerequisites: Ed 345.
Review of innovations, assessment of latest instructional materials; overview of research and current implementation of significant changes in modern reading instruction.

Ed 522 Seminar: Children with Special Needs.
Cat. I. 3 credits.
Prerequisites: Ed 238, Ed 348, Ed 350.
This course considers the research related to specific problems of children with special needs through the presentation of seminar papers. Practicum experience is required of all students.

Ed 535 Independent Study in Elementary Education.
Cat. I. 3 credits.
Prerequisite: Upperclassmen.
For the student who wishes to pursue independent study in a specialized area of education; a greater understanding and appreciation of education should result from this study in depth; faculty members from other disciplines may be called in to counsel the student in resources and approaches.

Ed 635 Practicum: New Elementary Science Curricula.
Cat. I. 3 credits.
Preparing teams of students in the philosophy, major objectives, teaching methodology of the new Elementary Science curricula; developing materials, strategies, and a model for the implementation for these new instructional materials; teams will teach these programs in local schools as a major portion of the program.

Ed 635
Ed 636 Student Teaching in the Elementary School. (Kindergarten through Grade 6).
Cat. 1. 6 credits.
Prerequisite: Completion of required education courses.
Actual teaching in schools of Worcester and vicinity; principles, techniques and responsibility for planning, executing, and evaluating teaching-learning.

Ed 670 Social Action Education Practicum.
Cat. 1. 3 credits.
Prerequisite: Upperclassmen.
Work-study program provides students with an opportunity to work in different social and educational agencies under supervision.

English

Professor:
Edmunds, Goldwyn, Herx, Johnson, Sullivan, W.

Associate Professor:
Gibbs, Roberts, Todd

Assistant Professor:
Ayer, Barraford, Crowley, Eddy, Ellis, Normandin, Sullivan, R., Walker, Wasilko

Instructor:
Downey, Grandone

The English Department offers a major leading to either a B.A. or B.S. degree. If this major is combined with a minor in secondary education, the graduate will be qualified to teach English at the secondary level.

Students who may major in English may also enter a variety of careers in business, government service, and writing. They can qualify for entrance to professional schools such as law and medicine; applicants with such a background are often looked on very favorably. Many English majors go on to graduate study in literature, linguistics, and other fields.

English courses are designed to help students develop their analytical powers, writing ability, and capacity for understanding and appreciating great literature. The literature courses include general surveys, period and genre studies, studies of single authors, and literary criticism. The Department also offers linguistics courses and a concentration in writing. Special topics courses and the opportunity for independent study complement the regular offerings. Membership in Lambda Iota Tau, the international honor society in literature, is open to qualified English majors.

An English minor of six courses (eighteen semester hours) is available to students who wish to increase their understanding of literature or skill in communication.

English Major Requirements

English majors are required to take at least 36 semester hours in English exclusive of En 100, En 101, or En 102. Required courses are: Survey of American Literature (En 101 or 111), Survey of English Literature (En 120 and En 121), and Shakespeare 1 (En 420). An English major should maintain a 2.5 quality point average in English.

RECOMMENDED PROGRAM FOR ENGLISH MAJORS (B.A./B.S.)

FRESHMEN

Fall Semester

English Composition I or 100's course

Spring Semester

English Composition II
Survey of American Literature I or II

SOPHOMORE

Fall Semester

English Literature I
English Elective (200 series)

Spring Semester

English Literature II
English Elective (200 series)

JUNIORS

Fall Semester

Shakespeare I
English Electives (200 series and above)

Spring Semester

English Electives (200 series and above)

SENIORS

English electives and the remainder of the program including minor requirements and choice of electives should be planned by the student in consultation with his Faculty Advisor. Depending on the approach or career which each student has in mind, electives in English should be chosen carefully. Advisors maintain lists of suggested courses should a student be interested in graduate school preparation, secondary school teaching preparation, elementary school teaching preparation, the liberal arts degree, creative writing, etc.

CONCENTRATION IN WRITING

Recommended Program for English Majors or Minors Concentrating in Writing.

En 304 Technical Writing
En 305 Advanced Composition
En 310 Creative Writing: Prose I
En 312 Creative Writing: Prose II
En 320 Creative Writing: Poetry I
En 322 Creative Writing: Poetry II
En 330 Journalism and Mass Communications
En 332 Journalism — Practice and Techniques
En 525 Independent Study in English
Me 386 Writing for Stage and Screen

RECOMMENDED PROGRAM FOR ENGLISH MINORS

Recommended courses are the following: Survey of American Literature I or II, Survey of English Literature I and II, three English electives.

Suggested Courses for Students with a Major in Elementary Education and Concentrating in English:

Introduction to Poetry
Mythology
Structure of Modern English
Science Fiction
Short Story
Contemporary Literature
Afro-American Literature
Modern Drama
History of the English Language
Shakespeare I
Survey of American Literature I
Survey of American Literature II
Survey of English Literature I
Survey of English Literature II
Introduction to Drama
Literature and Social Change
Novelette

Elementary majors are urged to contact their Advisor in selecting English electives for their concentration in English.

Explanation of Course Numbering in English

En 100-199— Introductory courses of general interest. No prerequisites:
En 200-299— Period surveys — English, American and Continental. Considered basic background for English majors but open to all who meet prerequisites where specified.
En 300-399— Courses in writing skills, language arts and criticism. Practical and theoretical mastery of the tools of literature.
En 400-499— Advanced courses dealing with major figures and specialized periods.
En 500-599— Courses with a specialized methodology. Seminars, special topics, symposia, colloquia, interdisciplinary, studies, independent study. These courses are not generally accepted for distribution.

COURSE DESCRIPTIONS

En 100 English For Communication Skill: Cat. I. 3 hrs.
Prerequisite: consent of Instructor.
Individualized instruction in the English language to meet specific needs of foreign students; emphasis on phonetic practice for clear speech with practice in reading and writing for academic and occupational success.

En 101 English Composition I. Cat. I.
Review of English mechanics and writing principles; emphasis will be placed on writing; rhetorical analysis of selected readings; required of all Freshmen unless exemption is granted by the Department of English.

En 102 English Composition II. Cat. I. 3 hrs.
A continuation of En 101. Further emphasis on writing and analysis of selected readings; instruction in the technique of research and the writing of a research paper; required of all Freshmen unless exemption is granted by the Department of English.

En 110 Survey of American Literature I. Cat. I. 3 hrs.
Prerequisites: none.
American literature up to the Civil War; colonial and federal periods and transcendentalists.

En 111 Survey of American Literature II.
Cat. I. 3 hrs.
Prerequisites: none.
American Literature after the Civil War; naturalism and realism.

En 120 Survey of English Literature I.
Cat. I. 3 hrs.
Prerequisites: none.
The development of English literature from the beginnings to 1798; required of all English majors.

En 121 Survey of English Literature II.
Cat. I. 3 hrs.
Prerequisites: none.
The development of English literature from 1978 to the present; required of all English majors.

En 140 Introduction to Poetry.
Cat. I. 3 hrs.
Prerequisites: none.
Technical aspects of poetry, such as figures of speech, meter, rhyme, imagery, and the symbol; types of poetry, including the sonnet, the pastoral, the mock heroic, and the ode; examples range from the Elizabethans to the moderns; short writing assignments required.

En 145 Introduction to Drama.
Cat. I. 3 hrs.
Prerequisites: none.
Theories and development of tragedy, comedy, and tragicomedy; drama from Sophocles to Eugene O'Neil as illustrations of these and the related genres of melodrama and farce.

En 150 The Short Story.
Cat. I. 3 hrs.
Prerequisites: none.
The short story form from its origins in the medieval tale to modern short stories which are psychological probings of character; attention to changes in structure and to Poe's theory of the short story; selection from Conrad, Mansfield, Joyce, and others.

En 164 Afro-American Literature.
Cat. I. 3 hrs.
Prerequisites: none.
Black literature considered chronologically in the total context of American culture; analysis of Black poetry, drama and fiction; contemporary non-fictional writing of the Black community considered as an expression of the dynamic social changes occurring in that community.

En 166 Literature and Social Change.
Cat. 3. 3 hrs.
Prerequisites: none.
Examines the role of literature in society as a means of protesting social abuses and effecting social change; works in various genres, periods, and traditions by such writers as Swift, Blake, Shaw, Camus, Brecht, and Steinbeck studied in terms of the author's social concern and impact; an attempt to measure the actual effect on society of at least one writer's work.

En 168 Film and Literature.
Cat. 2. 3 hrs.
Prerequisites: none.
An examination of the fundamental rhetorical techniques of film and literature to determine the similarities of and differences between the two forms of expression. The ultimate aim is to gain a clearer understanding and deeper appreciation of both the art of the motion picture and the art of imaginative literature. Various works will be considered according to genre, ranging from the literary essay and novel to the filmed documentary and screenplay.

En 170 The Search For Identity: Literature of Self Discovery.
Cat. 3. 3 hrs.
Prerequisites: none.
Analysis of several literary works which deal with the experience of self-discovery and what various authors have tried to say about the nature of the self; Conrad, Hesse, D.H. Lawrence, Tolstoy, and others.

En 174 The Search for Utopia.
Cat. 3. 3 hrs.
Prerequisites: none.
An exploration of the idea and theme of Utopia in literature focusing on representative works and movements in England and America in the nineteenth and twentieth centuries.

En 176 A Look at War.
Cat. 3. 3 hrs.
Prerequisites: none.
A survey of literature, graphic art, journalism and ideological writings dealing with war; covers material from the Peloponnesian Wars to the Vietnam War.

En 202 Classics I: Ancient.
Cat. I. 3 hrs.
Prerequisites: none.
Greek and Roman masterpieces in translation, including Homer, Greek tragedy, Plato, and Vergil, as well as selections from the Bible.

En 204 Classics II: Renaissance through Modern.
Cat. 2. 3 hrs.
Prerequisites: none.
World masterpieces of the Renaissance through the modern period, with emphasis on continental works in translation.

En 206 Medieval English Literature.
Cat. I. 3 hrs.
Prerequisite: En 120.
English literature from the twelfth to the fifteenth centuries with a focus on lyric poetry, ballads, the mystery and morality plays, *Piers Plowman,* and the work of the Pearl Poet and Sir Thomas Malory.

En 208 Medieval Comparative Literature.
Cat. I. 3 hrs.
Prerequisites: none.
Ideas of medieval Christianity, courtly love, and chivalric honor as they appear in *The Song of Roland,* Arthurian romances, the Grail legend, the story of Tristan and Iseult, *The Romance of the Rose,* Troubadour lyrics, and Dante's *Divine Comedy.*

En 210 The Renaissance.
Cat. I. 3 hrs.
Prerequisites: En 120.
A study of the chief non-dramatic literature of Tudor England; emphasis on the writings of More, Wyatt, Sidney, and Spenser, and on the earlier work of Shakespear, Donne, and Bacon.

En 214 Seventeenth Century Literature.
Cat. I. 3 hrs.
Prerequisites: Completion of Freshman year.
Prose and poetry of this era with special attention to the major works of Jonson and Donne.

En 218 Eighteenth Century Literature.
Cat. I. 3 hrs.
Prerequisites: En 120.
A comprehensive study of the major figures of the Enlightenment with particular emphasis on the nature of Neo-Classicism as seen in the works of Pope, Swift, Dryden, Johnson and Boswell, and others.

En 220 The Age of Pope and Swift.
Cat. I. 3 hrs.
Prerequisites: En 120.
English literature of the early Restoration and the eighteenth century in terms of its political, religious, and philosophical milieu; the character of neo-classicism, the strategies of Augustan satire. Contrae-figures: Dryden, Pope and Swift.

En 222 The Age of Johnson.
Cat. 1. 3 hrs.
Prerequisite: En 120.
Johnson and Boswell are the central figures; also Goldsmith, Burke, Sheridan, Gibbon, Reynolds, and others of the second half of eighteenth century England.

En 226 The English Novel of the Eighteenth Century.
Cat. I. 3 hrs.
Prerequisite: Completion of the Freshman year.
Purpose, range, and developments in the novel of the eighteenth century; Defoe, Richardson, Fielding, Smollett, Sterne, and others.

En 228 The English Novel of the Nineteenth Century.
Cat. I. 3 hrs.
Prerequisite: Completion of the Freshman year.
Representative nineteenth century novelists: Austen, Bronte, Dickens, Thackeray, Eliot, Hardy, Conrad, and others.

En 230 The Modern British Novel.
Cat. I. 3 hrs.
Prerequisites: completion of Freshman year.
An examination of selected works of major British novelists from 1900 through WW II: Joyce, Lawrence, Woolf, Forster among others.

En 232 Romantic Literature.
Cat. I. 3 hrs.
Prerequisites: Completion of Freshman year.
Poetry and prose with special emphasis on the poetry of Wordsworth, Coleridge, Shelley, Byron, and Keats; attention to modern critical views as well as contemporary attitudes.

En 240 Victorian Poetry.
Cat. 1. 3 hrs.
Prerequisite: Completion of Freshman year.
Emphasis on Tennyson, Browning, Arnold, and Swinburne as thinkers and stylists; readings in Rossetti, Hopkins, Houseman, Hardy, and others; special attention to the development of the modern mind and its struggle with Romanticism.

En 246 Victorian Essayists.
Cat. I. 3 hrs.
Prerequisites: Completion of Freshman year.
Analysis of the essays of Macauley, Carlyle, Newman, Darwin, Huxley, Mill, Arnold, Ruskin, Pater, and Stevenson; consideration of the classical principles of rhetoric, as well as the innovation in ideals, political principles, religious conceptions, scientific theories, and cultural changes recorded in these essays as they illuminate both the Victorian and the modern world.

En 248 English Humorists of the Nineteenth Century.
Cat. 3. 3 hrs.
Prerequisites: none.
Form and function of English humor and wit in the nineteenth century; The Regency wits, Byron, Lamb, Dickens, Thackeray, Carroll, Wilde, Gilbert and Sullivan, Shaw, and others.

En 250 Continental Novelists I.
Cat. I. 3 hrs.
Prerequisite: Completion of Freshman year.
Such selected European novelists of the 19th and 20th centuries as Stendhal, Dostoyevsky, Mann, and Camus and others. Examination of works in which the authors attempt to come to terms with the reality of post-Napoleonic Europe.

En 252 Continental Novelists II.
Cat. I. 3 hrs.
Prerequisite: completion of Freshman year.
An examination of later works by the authors dealt with in Continental Novelists I; exploring works which deal with the writer's retreat into isolation and removal from the scene examined in that course.

En 260 Major Russian Authors.
Cat. 2. 3 hrs.
Prerequisites: none.
A critical analysis of the principal writings of the Russian masters of drama, fiction, and poetry; emphasis on the works of Tolstoy, Dostoyevsky, Chekov, Gogol, Pushkin, and Turgenev; attention given to the cultural and historical milieu in which these works were produced.

En 270 Modern Drama.
Cat. I. 3 hrs.
Prerequisite: completion of Freshman year.
The theories and development of realism, naturalism, expressionism, folk drama, Brecht's epic theatre of alienation, representative plays from Ibsen to O'Neill for reading and analysis.

En 272 Contemporary Drama.
Cat. I. 3 hrs.
Prerequisite: Completion of Freshman year.
A survey of the more significant plays of the contemporary theatre; concentration on the dramatic works and theories of Albee, Artaud, Beckett, Brook, Genet, Grotowski, Ionesco, Miller, Williams and Pinter.

En 280 Modern Poetry.
Cat. I. 3 hrs.
Prerequisites: En 120 and En 121.
Close analysis of the development of British and American poetry from the late nineteenth century to World War II.

En 282 Contemporary Poetry.
Cat. I. 3 hrs.
Prerequisite: Completion of Freshman year.
Concentrates on poets whose major work has occurred after World War II; special attention to poets presently writing and publishing.

En 286 Contemporary Novel.
Cat. I. 3 hrs.
Prerequisite: Completion of Freshman year.
American and English novels after World War II, with emphasis on living novelists; selections representing a wide variety of themes and styles.

En 290 The American Novel I.
Cat. I. 3 hrs.
Prerequisite: Completion of Freshman year.
The American novel from its origin to 1890; Brown, Cooper, Melville, Hawthorne, and others.

En 294 The American Novel II.
Cat. I. 3 hrs.
Prerequisite: Completion of Freshman year.
The American novel from 1890 to World War II; Crane, Wolte, Dreiser, Anderson, Hemingway, Steinbeck, and others.

En 301 The Development and Character of the English Language.
Cat. I. 3 hrs.
Prerequisite: En 101.
Provides a fundamental knowledge of the historical development and present character of the English language: phonology (phonetics and phonemics), morphlogy, syntax, vocabulary (etymology and semantics), and metalinguistics (relations of language and society - for example, usage).

En 304 Technical Writing.
Cat. 3. 3hrs.
Prerequisite: English Composition.
Focuses on how to write and produce basic documents, from research and progress reports, proposals, and specifications to brochures and manuals. (Particularly suitable for those anticipating careers in the technical professions: engineering, systems analysis, business management, government and industry).

En 305 Critical Writing.
Cat. I. 3 hrs.
Prerequisite: Consent of Instructor.
Examination of English prose style; class reports on history, structure and critical standards of the English language; training in the writing of analytical papers on shorter fiction and poetry culminating in preparation of a longish graduate seminar type paper examining an author or authors in depth.

En 310 Creative Writing: Prose I.
Cat. I. 3 hrs.
Prerequisite: Consent of Insturctor.
An attempt to develop the student's writing ability and critical sense; work of the students and of authors of established reputation will be read, analyzed, and discussed; laboratory method used as needed.

En 312 Creative Writing: Prose II.
Cat. I. 3 hrs.
Prerquisite: Consent of Instructor.
A continuation of En 310; offers instruction in composing various types of prose fiction.

En 320 Creative Writing: Poetry I.
Cat. I. 3 hrs.
Prerequisite: Consent of Instructor.
Developing the student's skill in the creation of poetry; attention to contemporary trends in American poetry along with discussion of the major poets of the recent past.

En 322 Creative Writing: Poetry II.
Cat. I. 3 hrs.
Prerequisite: Consent of Instructor.
Conversation with practicing poets; preparation of small booklet of poems; En 320 not required.

En 330 Journalism and Mass Communications.
Cat. 2. 3 hrs.
Prerequisite: Completion of Freshman year.
The role of the press in modern America and its impact on society; philosophical and constitutional questions concerning freedom of the press discussed; major forms of journalistic writing reviewed so that the student can become a critical analyst of the mass media; major emphasis of the course is not on writing newspaper articles; the course is intended to make the student more appreciative of the press rather than to make him or her a working journalist.

En 332 Journalism — Practice and Techniques.
Cat. I. 3 hrs.
Prerequisite: completion of Freshman year.
This course deals with the techniques and practices of various journalistic forms for the beginning student. The course is intended to sharpen the student's basic writing, mechanical, and editing skills. It covers the development and use of news sources, interviewing, and certain legal aspects of journalism. The primary emphasis is to familiarize the student with the style of writing appropriate for straight news, feature stories, obituaries, coverage of speeches and meetings, and so forth. The student is expected to write on a regular basis, and assignments will include writing on campus events.

En 350 History of Literary Criticism.
Cat. I. 3 hrs.
Prerequisites: none.
An historical introduction to speculation concerning the nature and function of literature; selections from Plato to Frye.

En 370 The History of the English Language.
Cat. I. 3 hrs.
Prerequisite: none.
A study of the following: 1) Indo-European languages-the origins of English; 2) Old English-reading, phonology, syntax; 3) Middle English-reading, syntactic change; dialect variations; 4) Modern English-lexicography and grammar; effects of mass media on arrestation and change.

En 375 Structure of Modern English.
Cat. I. 3 hrs.
Prerequisites: none.
An introduction to traditional and linguistic description of modern English.

En 410 Chaucer.
Cat. I. 3 hrs.
Prerequisites: none.
A study of the development of Chaucer's versatile art and of his writings as expressive of the later Middle Ages; includes *The Canterbury Tales, The Book of the Duchess, The House of Fame, The Parliament of Fowls, and Troilus and Cressida;* reading of Chaucerian English will be stressed (recordings used).

En 420 Shakespeare II.
Cat. I. 3 hrs.
Prerequisite: Completion of Freshman year.
Major plays; required of all English majors.

En 425 Shakespeare II.
Cat. 2. 3 hrs.
Prerequisite: Shakespeare I.
A continuation of En 420 which will include the sonnets and less familiar plays.

En 428 Jacobean Drama.
Cat. I. 3 hrs.
Prerequisite: En 450.
A study of plays by the contemporaries of Shakespear: Beaumont, Chapman, F Fletcher, Ford, Jonson, Massinger and Webster.

En 430 Milton.
Cat. I. 3 hrs.
Prerequisite: Completion of Freshman year.
A study of Milton's work from early poems to *Paradise Lost, Paradise Regained,* and *Samson Agonistes;* includes some prose pamphlets.

En 445 The English Theatre. 1660-1780.
Cat. 2. 3 hrs.
Prerequisite: Completion of Freshman year.
A survey of plays of the Restoration period and the eighteenth century; genres of comedy and tragedy with some considerations to politics, manners, and society.

En 475 The Irish Literary Revival.
Cat. I. 3 hrs.
Prerequisite: Completion of Freshman year.
The works and writers of the Irish Renaissance; an examination of the origins of the movement as well as the writings of Joyce, Yeats, Synge, O'Casey, Lady Gregory, and others.

En 500 Seminar.
Cat. I. 3 hrs.
Prerequisites: Completion of Freshman year; consent of Instructor.
Student presentations on individual figures and particular problems in literature; class size limited to 15 students; may be repeated for credit with a change in subject matter.

En 522 Hemingway and O'Neill.
Cat. 3. 1-3 hrs.
Prerequisites: En 111 and consent of Instructor.
Seminar devoted to Hemingway's short stories and novels and representative plays of O'Neill.

En 525 Independent Study in English.
Cat. 3. 1-3 hrs.
Prerequisites: Consent of department and instructor.
A course-concept enabling the individual student to pursue independent study when it is deemed suitable by the department and when appropriate Instructor is available.

En 550 Special Topics in Literature.
Cat. 3. 3 hrs.
Prerequisite: Consent of Instructor.
Specific content will vary in response to particular student and staff interests; in any given semester the course deals with the work of a limited selection of writers or a special topic not dealt with in the basic curriculum.

Foreign Languages

Professor:
Butler

Associate Professor:
Alcala, DeBenedictis, Hartwig, Shea

Assistant Professor:
Celona, Grimes, Kittredge, O'Connor

The Department of Foreign Languages offers major programs in both French and Spanish. Minor concentrations are also available in French, Spanish and German. The objectives of the department are to provide courses of studies which develop and enhance one's functional mastery of the listening, speaking, reading, and writing skills of a foreign language. In addition, courses in the appreciation and understanding of the literature and civilization foster other insights. If the French and Spanish major plans to teach by electing a minor in Education, he will be certified to teach French or Spanish on the secondary level. Foreign Language majors and minors with a non-teaching orientation may prepare for graduate school or for a career in other professions which require foreign language skills such as sociology, the diplomatic corps, business, travel, and library science.

FOREIGN LANGUAGE MAJOR REQUIREMENTS

Those students planning to major in a foreign language must successfully complete a minimum of 30 semester hours beyond the beginning level courses. In order to complete the required number of courses and to select in proper sequence, the candidate must choose his major concentration as early as possible in his academic career. Each prospective major should consult with his departmental advisor to plan his program and degree requirements. All foreign language majors are required to complete six semester hours of study in another foreign language. A competency in more than one foreign language increase the language majors' job opportunities. All foreign language majors who plan to teach are strongly advised to enroll in introduction to Linguistics (Fl 201).

FOREIGN LANGUAGE MINOR REQUIREMENTS

Minors are offered in French, Spanish, and German. A total of 18 semester hours credit are required for each minor. See recommended minor program under appropriate language.

FRENCH

A major in French shall consist of: two intermediate courses (maximum) in the 100 series; three courses (minimum) in the 200 series; one course (minimum) in the 300 series; three courses (minimum) in the 400 series; one to five courses free electives in the 200 series and above. A total of 10 - 14 courses are required.

A minor in French shall consist of: 18 hours credit of which at least six must be above the intermediate level. Foreign language courses listed as FL are not applicable to the minor except beyond the minimum six courses (18 semester hours).

RECOMMENDED PROGRAM FOR FRENCH MAJORS (B.A./B.S.)

FRESHMAN

Fall Semester

Any Intermediate French I (Fr 110, Fr 114, Fr 116)
Sp 101 Fundamental Spanish I
or
Gn 101 Beginning German I

Spring Semester

Any Intermediate French II (Fr 111, Fr 115, Fr 117)
Fr 202 Introduction to French Phonetics
Sp 102 Fundamental Spanish II
or
Gn 102 Beginning German II

SOPHOMORE

Fall Semester

Fr 201 Advanced French
Fr 210 Advanced French Conversation
Fr 301 General French Civilization

Spring Semester

Fr 211 Advanced French Conversation II
Fr 401 Introduction to French Literature

JUNIOR

Fall Semester

Fr 212 Advanced French Composition I
Any French Literature in 400 series
Fl 201 Applied Linguistics I

Spring Semester

Fr 213 Advanced French Composition II
Any French Literature course in 400 series
Fr 302 Contemporary French Civilization
Ed 335 Teaching Methods in French

SENIOR

Fall Semester

Student Teaching
For non-teaching majors, select 300 series and above from French offerings

Spring Semester

Any French Literature course in th 400 series.

GERMAN

There is no major in German. A minor in German shall consist of: two to four courses (maximum) in the 100 series one course (minimum) in the 200 series; one course (minimum)in the 300 series and above. A total of 18 semester hours (six courses) are required. Foreign Language courses (listed as Fl) are not applicable to the minor except beyond the minimum six courses (18 semester hours).

RECOMMENDED PROGRAM FOR MINOR IN GERMAN

Gn 101, 102 Beginning German I, II — 6 semester hours
Gn 110, 111 Intermediate German I, II — 6 semester hours
Gn 301,302 General German Civilization I, II — 6 semester hours

Plus One of the Following:

Gn 210 Readings in German Literature I
Gn 211 Readings in German Literature II
Gn 502 Independent Study in German

SPANISH

A major in Spanish shall consist of two intermediate courses (maximum) in the 100 series, three courses (minimum) in the 200 series, one course (minimum) in the 300 series, three courses (minimum) in the 400 series, one to five courses free electives in the 200 series and above. A total of 10 - 14 courses are required.

A Spanish minor shall consist of: 2 or 4 courses (maximum) in the 100 series, only 2 of which may be entitled intermediate Spanish; and 2 to 4 courses in the 200 series and above. A total of 18 semester hours (6 courses) is required. Foreign language courses listed as Fl are not applicable to the minor except beyond the minimum six courses (18 hours).

RECOMMENDED PROGRAM FOR SPANISH MAJORS (B.A./B.S.)

FRESHMAN

Fall Semester

Any Intermediate Spanish I (Sp 110, Sp 111, or Sp 112)
Fr 103 Beginning French I or
Gn 101 Beginning German I

Spring Semester

Any Intermediate Spanish II (Sp 113, Sp 114, or Sp 115)
Fr 104 Beginning French II or
Gn 102 Beginning German II

SOPHOMORE

Fall Semester

Sp 201 Advanced Spanish Composition I
Sp 210 Spanish Conversation I

Spring Semester

Sp 202 Advanced Spanish Composition II
Sp 211 Spanish Conversation II

JUNIOR

Fall Semester

Sp 301 Spanish Civilization
Sp 401 Readings in Spanish Literature
Fl 201 Applied Linguistics I

Spring Semester

Any Spanish Literature in the 400 series
Ed 393 Teaching Methods in Spanish

SENIOR

Fall Semester

Student Teaching in Spanish
For non-teaching majors, elect Spanish courses offered in 400 series and above

Spring Semester

Any Spanish Literature in 400 series

COURSE DESCRIPTIONS

Fl 100 English for Communication Skill.
(See En 100).

Fl 202 Foreign Language Business Correspondence.
Cat. 2. 3 hrs.
Prerequisite: none.
The essential aspects of structure in French, German and Spanish; use of dictionaries; acquaintance with formulae of commercial correspondence and translation of same.

Fl 201 Introduction to Linguistics.
Cat. I. 3 hrs.
Prerequisites: none.
An introduction to the scientific study of language with illustrations drawn primarily from American English. Traditional and contemporary theories of phonetics, grammar (structural, generative, transformational), semantics and semiotics. Psychology and sociology of language.

Fl 202 Applied Linguistics II.
Cat. I. 3 hrs.
Prerequisites: Fl. 201, or En 210 or Ed 450, or Cd 230.
The second semester continues with comparison of the phonetic, morphological and syntatic structure of English to selected foreign languages; problems of bilingualism, interference, teaching English to speakers of other languages.

Fl 301 Masterpieces of French Literature in Translation I.
Cat. 3. 3 hrs.
Prerequisites: Sophomore standing or above.
Selected masterpieces of the drama, fiction, and essay from the Middle Ages to the present.

Fl 302 Masterpiece of French Literature in Trnaslation II.
Cat. 3. 3 hrs.
Prerequisites: Sophomore standing or above.
Continuation of Fl 301.

Fl 303 German Literature in Translation: Prose of Mann, Kafka, Hesse.
Cat. 3. 3 hrs.
Prerequisites: Completion of Freshman year.
Works by authors who have touched upon problems that are disturbingly similar to those of our day; contributions of Musil, Doblin; others are also considered.

Fl 304 German Literature in Translation: The Problems of Identity and Responsibility.
Cat. 3. 3 hrs.
Prerequisite: Completion of Freshman year.
Various types of response to cataclysms of our century; post WW II authors — Grass, Boll, Frisch, et al.

Fl 400 Foreign Language Intra-Departmental Seminar.
Cat. 2. 3 hrs.
Prerequisite: Completion of Freshman year.
Presentation of particular theme, genre, period or problem common to Spain, France, Germany; conducted in English by six members of the Department of Foreign Languages.

French

Fr 101 Introduction to French Language and Culture I.
Cat. I. 3 hrs.
Prerequisites: none.
The fundamentals of spoken and written French correlated informally with a comparative study of French and Anglo-American culture and civilization; recommended for humanities distribution requirements.

Fr 102 Introduction to French Language and Culture II.
Cat. I. 3 hrs.
Prerequisite: Fr 101 or equivalent.
Continuation of Fr 101.

Fr 103 Beginning French I.
Cat. I. 3 hrs.
Prerequisite: none.
Fundamentals of pronunciation, patterns of speech basic structures by aural-oral methods: recommended for those with little or no previous study of French, but who intend to continue to a higher level.

Fr 104 Beginning French II.
Cat. I. 3 hrs.
Prerequisite: Fr 103 or equivalent.
Continuation of Fr 103.

Fr 110 Intermediate French I.
Cat. I. 3hrs.
Prerequisites: Fr 102 or Fr 104 or 2 yrs. of high school French.
Review of grammar, verb structure, written, oral drills, selected reading.

Fr 111 Intermediate French II.
Cat. I. 3 hrs.
Prerequisites: Fr 110 or 2 yrs. of high school French. Continuation of Fr 110.

Fr 114 Intermediate French I: Readings and Translation.
Cat. 2. 3 hrs.
Prerequisites: Fr 102 or Fr 104 or 2 years of high school French.
Alternative intermediate course; recognition of basic forms and strcutres; acquisition of basic vocabulary for literary, journalistic and technical reading.

Fr 115 Intermediate French II: Readings and Translation.
Cat. 2 3 hrs.
Prerequisites: Fr 114 or 2 yrs of high school French. Continuation of Fr 114.

Fr 116 Intermediate French I: Conversation.
Cat. I. 3 hrs.
Prerequisites: Fr 102 or Fr 104 or 2 yrs. of high school French.
Conversational patterns, idioms, dialogues, special vocabularies for travel and occupations.

Fr 117 Intermediate French II: Conversation.
Cat. I. 3 hrs.
Prerequisites: Fr 116 or 2 yrs. of high school French.
Continuation of Fr. 116.

Fr 201 Advanced French.
Cat. I. 3 hrs.
Prerequisites: Any 2 French 110-117 courses, or equivalent, or consent of Instructor.
Intensive, thorough review of grammar; practice in translation and composition; conducted in French.

Fr 202 Introduction to French Phonetics.
Cat. I. 3 hrs.
Prerequisite: Any Fr 100 course.
Theory and practice of French sound system; corrective work in language laboratory.

Fr 210 Advanced French Conversation I.
Cat. 1. 3 hrs.
Prerequisites: Fr 202 or consent of Instructor.
Complete review of pronunciation for fluency and accuracy; intonation patterns, practical approach to spoken idiom; language laboratory.

Fr 211 Advanced French Conversation II.
Cat. I. 3 hrs.
Prerequisites: Fr 210 or consent of Instructor.
Continuation of Fr 210 with emphasis on facility and naturalness.

Fr 212 Advanced French Composition I.
Cat. I. 3 hrs.
Prerequisite: Fr 201.
Review of more difficult points of French grammar; advanced work in idioms; stylistic analysis of selected exerecises in literary extracts.

Fr 213 Advanced French Composition II.
Cat. I. 3hrs.
Prerequisite: Fr 212 or consent of Instructor.
Continuation of Fr 212. Mastery of complex grammatical problems; strengthen fluency in expository writing.

Fr 301 General French Civilization.
Cat. I. 3 hrs.
Prerequisites: 2 courses in Fr 100 series.
Significant aspects of French history, geography, culture up to World War I. Essential background to literary study.

Fr 302 Contemporary French Civilization.
Cat. I. 3 hrs.
Prerequisites: none.
Political, social, cultural reality in France since World War I.

Fr 320 The French in America.
Cat. 2. 3hrs.
Prerequisites: Any intermediate level French course or equivalent.
A broad historical – cultural survey of the French presence in the Americas from the explorations of Cartier and Champlain to modern times. French ethnicity and culture identity will be discussed in relationship to such groups as the Quebecois, the Acadians in the Canadian Maritimes and New Orleans, the Franco-American population of New England and the French speaking population of Haiti, Martinique and Guadeloupe. Emphasis will be on contemporary political developments, folklore, music, literature, arts and crafts. Approach will be more extensive and comprehensive than exhaustive of any one topic.

Fr 401 Introduction to French Literature.
Cat. I. 3 hrs.
Prerequisites: Any Fr 110-117 course.
Major periods and genres of French literature; writing literary studies and *explications de texte* in French; recommended first literature course for majors.

Fr 402 Medieval and Renaissance French Literature.
Cat. 2. 3 hrs.
Prerequisites: Any Fr 110-117 course; Fr 401 recommended.
Selections from the epic, theatre, lyric poetry and major prose writers.

Fr 403 French Literature of the Seventeenth Century.
Cat. 2. 3 hrs.
Prerequisites: Any Fr 110-117 course; Fr 401 recommended.
Major authors of the classical period with emphasis on Corneille, Moliere and Racine.

Fr 404 Eighteenth Century French Literature.
Cat. 2. 3 hrs.
Prerequisites: Any Fr 110-117 course; Fr 401 recommended. Major works – Montesquieu, Voltaire, Diderot, Rousseau plus representative play and novel.

Fr 405 Nineteenth Century French Literature.
Cat. 2. 3 hrs.
Prerequisites: Any Fr 110-117 course; Fr 401 recommended.
Major Romantic, Realist and Symbolist authors.

Fr 406 Twentieth Century French Literature.
Cat. I. 3 hrs.
Prerequisites: Any Fr 110-117 course; Fr 401 recommended.
Major novelists, dramtists and poets from the turn of the century to the present.

Fr 409 Modern French Theatre.
Cat. 3..3 hrs.
Prerequisites: two 100 series courses, and consent of Instructor.
Study of major representative French plays from 1850 to present; from the realistic theatre of Becque and Zola, through Claudel, Anoulih, Salacrok, Cocteau, Camus, Sartre, and representative contemporaries: Beckett, Ionesco, Genet, Arrabal, and others. Representative readings.

Fr 412 Development of French Lyric Poetry. Cat. 3. 3 hrs.
Prerequisites: Two 100 series courses, Fr 401, and consent of Instructor.
Study of selected masterpieces, forms and movements from the Middle Ages through the century. Representative poets such as Villon, d'Orleans, Sceve, Labe, du Bellay, Ronsard, Lamartine, Hugo, Musset, Baudelaire, Verlaine, Rimbaud, Laforgue, Apollinaire, Fargue, Reverdy, Cocteau will be studied.

Fr 501 Seminar in French Studies.
Cat.. 3. 3 hrs.
Prerequisites: Open to Junior and Senior majors and minors; since topics vary, the course is repeatable.
Special topics in French literature, civilization or language.

Fr 502 Independent Study in French.
Cat. 3. 3 hrs.
Content and eligibility subject to departmental guidelines.

German

Gn 101 Beginning German I.
Cat. I. 3 hrs.
Prerequisites: none.
The German language - its fundamentals of structure, speech patterns, pronunciation, writing, reading, laboratory work.

Gn 102 Beginning German II.
Cat. I. 3 hrs.
Prerequisites: Gn 101 or equivalent.
Continuation of Gn 101.

Gn 110 Intermediate German I.
Cat. I. 3 hrs.
Prerequisites: Gn 110 or 2 years of high school German.
Fundamentals of the German language and presentation of more complex, stylistic features; selected readings as introduction to culture, conversation, composition.

Gn 111 Intermediate German II.
Cat. I. 3hrs.
Prerequisites: Gn 110 or 2 years high school German.
Continuation of Gn 110.

Gn 201 German for Reading Knowledge I.
Cat. 2. 3 hrs.
Prerequisites: Gn 102 or 2 years of high school German.
Basic grammar, structure of language, introduction to scientific terminology, vocabulary; translation, writings of resumes stressed.

Gn 202 German for Reading Knowledge II.
Cat. 2. 3 hrs.
Prerequisites: En 201 or 2 years of high school German.
Continuation of Gn 201.

Gn 210 Readings in German Literature I.
Cat. 2. 3 hrs.
Prerequisites: Gn 110, Gn 111, Gn 111, Gn 201, Gn 202.
Selected readings from major periods of German Literature.

Gn 211 Readings in German Literature II.
Cat. 2. 3 hrs.
Prerequisites: Gn 210 or equivalent.
Continuation of Gn 210.

Gn 220 German Conversation Composition.
Cat. I. 3 hrs.
Prerequisites: Gn 110, Gn 111.
Student's abaility to communicate via written, spoken word stressed; facilitates transition to advanced level courses.

Gn 301 General German Civilization I.
Cat. I. 3 hrs.
Prerequisites: Gn 110, Gn 111 Intermediate German I, II.
Characteristic aspects of German culture; significant elements of history, geography, social, economic development as an essential background to language and literature.

Gn 302 General German Civilization.
Cat. I. 3 hrs.
Prerequisites: Gn 110, 111.
Continuation of Gn 301.

Gn 502 Independent Study in German.
Cat. 2.3 hrs.
Content and eligibility subject to Departmental Guidelines.

Spanish

Sp 101 Fundamental Spanish I.
Cat. I. 3 hrs.
Prerequisite: none.
Basic oral, written proficiency for daily communication; taken as a self-contained unit or serve as basis for further language development; audio-visual method.

Sp 102 Fundamental Spanish II.
Cat. I. 3 hrs.
Prerequisites: Sp 101 or equivalent.
Continuation of Sp 101.

Sp 110 Intermediate Spanish I. Conversational Approach.
Cat. I. 3 hrs.
Prerequisites: Sp 102, or 2 years of high school Spanish.
Conversational patterns, idioms, dialogues; special vocabularies for travel and occupations.

Sp 111 Intermediate Spanish II. Conversational Approach.
Cat. I. 3 hrs.
Prerequisites: Sp 102, or two years of high school Spanish.
Continuation of Sp. 110.

Sp 112 Intermediate Spanish I. Literary Approach.
Cat. I. 3 hrs.
Prerequisites: Sp 102, or two years of high school Spanish.
Recommended for majors. Reading, translation; intensive grammar review and structure of language; appreciation of literature.

Sp 113 Intermediate Spanish II. Literary Approach.
Cat. I. 3 hrs.
Prerequisites: Sp 112.
A continuation of So 112.

Sp 114 Intermediate Spanish I. Journalistic Approach.
Cat. I. 3 hrs.
Prerequisites: So 102 or 2 years of high school Spanish.
Reading interpretation of newspapers, magazines, journals, speeches pertaining to curren events.

Sp 115 Intermediate Spanish II; Journalistic Approach.
Cat. I. 3 hrs.
Prerequisites: Sp 102, or 2 years of high-school Spanish.
A continuation of Sp 114.

Sp 201 Advanced Spanish Composition I.
Cat. I. 3 hrs.
Prerequisites: Any 2 Sp 110-115 courses or consent of Instructor (a good basis in grammar is helpful).
Facility is prose writing, study of style of selected authors; variety of expression through word discrimination.

Sp 202 Advanced Spanish Composition II.
Cat. I. 3 hrs.
Prerequisites: Any 2 Sp 110-115 courses or consent of Insturctor. (A good basis in grammar is helpful).
A continuation of Sp 201.

Sp 210 Spanish Conversation I.
Cat. I. 3 hrs.
Prerequisites: Any 2 Sp 110-115 courses or consent of Instructor.
Intensive conversational practice for improving intonation, pronunciation, fluency; review of language usage; introduction to phonetics; recommended for prospective teachers at elementary level in Spanish) speaking areas.

Sp 211 Spanish Conversation II.
Cat. I. 3 hrs.
Prerequisites: Sp 210, any 2 Sp 110-115 courses or consent of Instructor.
More advanced oral drill, functional exercises; speed, naturalness of more complex speech patterns; recommended for prospective teachers at elementary level in Spanish-speaking areas.

Sp 301 Spanish Civilization.
Cat. I. 3 hrs.
Prerequisites: Any 2 Sp 110-115 courses or consent of Instructor.
Cultural contributions through social, political life.

Sp 302 The Hispanic World Today I.
Cat. I. 3 hrs.
Prerequisites: Any 2 Sp 110-115 courses or consent of Instructor.
Social, economic and political institutions; collective assumptions, value systems and customs; profound and accelerated changes, their significance for the future; conducted in Spanish.

Sp 303 The Hispanic World Today II.
Cat. I. 3 hrs.
Prerequisites: Sp 302 or any 2 Sp 110-115 courses.
Continuation of Sp 302.

Sp 401 Readings In Spanish Literature.
Cat. I. 3 hrs.
Prerequisites: Any 2 Sp 110-115 courses or consent of Instructor.
Selected readings of masterpieces from Middle Ages to present; social, cultural, stylistic features of different periods.

Sp 402 Masterpieces of Spanish Literature of the Middle Ages.
Cat. 3. 3 hrs.
Prerequisites: Sp 401 or equivalent course.
Offered alternate years.

Sp 403 Literature of the Spanish Renaissance.
Cat. 3. 3 hrs.
Prerequisite: Sp 401 or equivalent course.
Works of the idealistic, realistic literary currents in narrative prose: caballaresque, pastoral, picaresque novels. Offered alternate years.

Sp 404 Spanish American Literature.
Cat. 2. 3 hrs.
Prerequisites: Any 2 Sp 110-115 course or consent of Instructor.
Representative authors, works from Colonial period to present. Offered alternative years, first semester.

Sp 405 Cervantes.
Cat. 2. 3 hrs.
Prerequisites: Sp 401 or equivalent course.
The Quijote; selected Novelas ejemplares. Offered alternate years, second semester.

Sp 406 Seventeenth Century Drama.
Cat. 2. 3 hrs.
Prerequisites: Sp 401 or equivalent course.
Selected works of Lope de Vega, Tirso de Molina, Calderon and other major dramatists of the age; study of the history of the 17th century drama and Spanish versification. Offered alternate years,second semester.

Sp 407 Nineteenth Century Spanish Literature: Romanticism.
Cat. 3. 3 hrs.
Prerequisites: Any 2 Sp 110-115 courses or consent of Instructor.
Reading, intensive study of poetry, essay, drama, novel of Peninsular Romantic Period. Offered alternative years, first semester.

Sp 408 Nineteenth Century Spanish Literature: The Novel.
Cat. 3. 3 hrs.
Prerequisite: Any 2 Sp 110-115 courses.
Development of 19th century novel; selected works of Valera, Galdos and other novelists. Offered alternate years, second semester.

Sp 409 Contemporary Spanish Literature.
Cat. 2. 3 hrs.
Prerequisites: Any 2 Sp 110-115 courses.
Role of Spain in modern times through literary works of 1898 to present.

Sp 501 Advanced Study: Special Topics.
Cat. 3. 3 hrs.
Prerequisites: Department recommendation.
Special topics in foreign language, literature, civilization or field work of mutual interest to student and instructor; offered when warranted.

Sp 502 Independent Study in Spanish.
Cat. 3. 3 hrs.
Content and eligibility subject to departmental guidances.

Arabic

Fl Arb 100 Elementary Arabic I.
Cat. I. 3 hrs.
Prerequisites: none.
This course is the first part of a year course in modern standard elementary classical Arabic. It introduces the students to the mechanics of reading and writing Arabic.

Fl Arb 101 Elementary Arabic II.
Cat. I. 3 hrs.
Prerequisites: Arb 100 or consent of instructor.
This is the second half of a year course in modern standard elementary classical Arabic. By the end of this course, a student should be able to read, write and understand simple Arabic. (i.e., newspaper Arabic with the help of a dictionary).

Geography and Geology

Professor:
Morris, Perry

Associate Professor:
Downey

Assistant Professor:
Hunt, Hurd, Lingner, Thompson

The Department of Geography and Environmental Studies offers a number of courses leading to a major in the field of geography for students pursuing the B.A. or B.S. degree. A minor in geography and a "concentration" in geography are also available. There are a few courses offered in geology and environmental studies for interested students who may wish to use these courses to meet the natural science requirements in their program of study.

Geography Major Requirements

A major in geography should elect the following required courses as early as possible in his program: Principles of Physical Geography; Principles of Cultural Geography; Geography of North America; Cartography and Geographic Techniques. In addition to the above required courses, all majors must select at least one advanced course in the physical, cultural and regional groups. At least 30 semester hours of credit in geography are required to complete a major. No more than 45 semester hours will be accepted toward the degree.

CATEGORIES: GEOGRAPHY COURSES

Regional Geography

Geography of Europe
Geography of Asia (excluding U.S.S.R.)
Geography of South America
Geography of Middle America
Geography of U.S.S.R.
Geography of Africa
World Regional Geography

Systematic Cultural Geography

Economic Geography
Political Geography
Urban Geography
Geography of Manufacturing
Urban and Regional Planning
Conservation and Natural Resource Management
Introduction to Urban & Regional Planning

Systematic Physical Geography

Hydrology
Geology I
Geology II
Climatology
Geomorphology
Meteorology
Oceanography
Glacial Geology
Regional Geomorphology of the U.S.

Special Courses in Geography

The Teaching of Geography
Readings and Directed Research

RECOMMENDED PROGRAM FOR GEOGRAPHY AND ENVIRONMENTAL STUDIES MAJORS (B.A./B.S.)

FRESHMEN

Fall Semester

Physical Geography
Physical Science I

Spring Semester

Cultural Geography
Physical Science II

SOPHOMORES

Fall Semester

Economic Geography

Spring Semester

Geography of North America

JUNIORS

Fall Semester

Fall Semester
Intro. to Cartography
Major Elective*

Spring Semester**

Applied Geographic Techniques
Major Elective*

SENIORS

Fall Semester**

Major Elective*
Major Elective (optional)*

Spring Semester**

Major Elective*
Major Elective (optional)*

* Electives should be selected with thought given to the field of specialization in which the individual student elects to concentrate.

** For those students who wish to minor in Secondary Education, an adjustment of this program is necessary. See Secondary Education model in this catalog.

RECOMMENDED PROGRAM FOR GEOGRAPHY AND ENVIRONMENTAL STUDIES MINOR

Principles of Physical Geography, Principles of Cultural Geography, Geography of North America, any systematic course - physical, any systematic course - cultural, an elective in Geography/Geology.

COURSE DESCRIPTIONS

Ge 101 Principles of Physical Geography.
Cat. I. 3 hrs.
Prerequisites: none.
Geographic principles of location; characteristics of landforms, soil, climate, minerals, water, flora and fauna.

Ge 102 Principles of Cultural Geography.
Cat. I. 3 hrs.
Prerequisites: none.
Man-land relationships; settlement patterns, problems related to urbanization, pollution, conservation and patterns of change.

Ge 120 Introduction to Geology
Cat. I. 3 hrs.
Prerequisites: none.
An introduction to mineral and rock formations of the earth's crust and their continual change under the effects of running water, wind, glaciers, vulcanism and other agents. Occasional local field trips.

Ge 201 World Regional Geography.
Cat. 3. 3 hrs.
Prerequisites: none.
Regional treatment of the political and cultural characteristics of Europe, U.S.S.R., Mid-East.

Ge 202 World Regional Geography II.
Cat. 1. 3 hrs.
Prerequisites: none.
Analysis of the physical, cultural and economic regions of Orient, Australia, Asia, Africa, Americans.

Ge 210 Geography of North America.
Cat. I. 3 hrs.
Prerequisites: none.
Techniques of regional analysis; types of manufacturing, agriculture and trade in the various regions of the continent; types of land use as affected by the physical environment.

Ge 220 Geology I.
Cat. I. 3 hrs.
Prerequisites: none.
Introduction to geological science; earth materials, structures, and the processes of erosion; two lectures and a two-hour laboratory per week.

Ge 221 Geology II.
Cat. I. 3 hrs.
Prerequisites: Ge 220.
A continuation of Geology I; evolution of the earth's crust, surface features, and life forms through geologic time; emphasis on methods of study; two lectures and a two-hour laboratory per week.

Ge 225 Oceanography.
Cat. I. 3 hrs.
Prerequisites: none.
One semester course in general oceanography designed to acquaint students with the principles of physical, chemical, biological, and geological oceanography; students should obtain an appreciation for the complexities of the marine sciences and a broad background that can be related to the study of other sciences; an attempt to stimulate the student interest in the field rather than becoming an authority on the oceans.

Ge 240 Geography of Africa.
Cat. I. 3hrs.
Prerequisites: Permission of Instructor.
Newly emerged nations - older advanced states - problems of cultures, and economics.

Ge 250 Hydrology.
Cat. I. 3 hrs.
Prerequisite: none.
Physical aspects of water flow; hydrologic cycle; economic, political and social problems in water resource planning; water pollution and quality control.

Ge 260 Geography of South America.
Cat. 2. 3 hrs.
Prerequisite: none.
Physical, economic, social and cultural analysis of the individual countries; historical background to present-day development.

Ge 270 Geography of Middle America.
Cat. 2. 3 hrs.
Prerequisite: Ge 101, Ge 102.
Present growth and trends in Mexico, Central America and the Caribbean realm as related to the nature of the landscape and cultural characteristics of its people.

Ge 280 Geography of the U.S.S.R.
Cat. I. 3 hrs.
Prerequisite: none.
Physical environment, differentiations due to regional economics, populations, cultural; problems of a giant in a tripartite power play.

Ge 290 Conservation and Natural Resource Management.
Cat. I. 3 hrs.
Prerequisites: none.
Problems in resource management; attempt at seeking optimal solutions to problems within the existing framework of physical, social, and economic constraints.

Ge 300 Problems in Energy Resource.
Cat. I. 3 hrs.
Prerequisite: none.
Contemporary problems of energy resources. Emphasis will be on supply, demand, and availabaility of alternative energy resources. Other areas of consideration will be the impact of politics, society, economics, and pollution on various uses of energy.

Ge 310 Geomorphology.
Cat. I. 3 hrs.
Prerequisite: Ge 220.
The earth's surface forms and the processes which produce them.

Ge 311 Regional Geomorphology of the U.S.
Cat. 2. 3 hrs.
Prerequisites: Ge 220 Geology I.
A survey of the varied physical landscapes of our country with an analysis of the evolution of the landforms therein; consideration of the broad patterns followed by detailed treatment of selected regions; special emphasis on the Northeast, famous National Parks of the West, and other areas of unique geologic interest; extended field trip may be arranged.

Ge 315 Meterology.
Cat. I. 3 hrs.
Prerequisite: none.
Weather elements, frontal storms, air mass characteristics, wind movement, temperature, precipitation, and pressure patterns throughout the world; weather instruments; forecasting.

Ge 320 Climatology.
Cat. I. 3 hrs.
Prerequisite: none.
Characteristics of the atmosphere; climates of the continents and classification of the world's climates.

Ge 325 Glacial Geology.
Cat. 2. 3 hrs.
Prerequisites: Ge 220.
Generates an appreciation of the Pleistocene Ice Age and its profound effects on world scenery; brief attention to the characteristics of existing glaciers followed by a detailed study of the erosional and depositional effects of past glaciers on landscapes and the many indirect effects on non-glaciated areas; investigation will be made into the chronology of glacial events in central and eastern North America as revealed through studies of glacial stratigraphy.

Ge 330 Geography of Asia.
Cat. I. 3 hrs.
Prerequisites: Permission of Instructor.
Physical and cultural environmental analysis; rapid changes, developments of recent origin, and problems facing the individual countries.

Ge 340 Georgraphy of Europe.
Cat. I. 3 hrs.
Prerequisite: none.
Euorpean landscapes, people, cultures, economics, problems of selected areas, attempts at unity.

Ge 351 Introduction to Cartography.
Cat. I. 3 hrs.
Prerequisite: none.
Theory and construction of maps.

Ge 352 Cartography and Geographic Techniques II.
Cat. I. 3 hrs.
Prerequisite: none.
Continuation of Introduction to Cartography, use of diagrams, charts and maps, and statistical analysis; field observations, planetabling, aerial photographic interpretation and original mapping.

Ge 360 The Middle East: Its Changing Environments.
Cat. 2. 3 hrs.
Prerequisites: none.
During hundreds of years of human history, this area of the world has been changing its landscapes, its way of living, its economies and its political structures. Course aims are to provide an inventory and understanding of these changes.

Ge 370 Geography of Manufacturing.
Cat. I. 3 hrs.
Prerequisites: none.
A systematic study of the spatial distribution of manufacturing activities; analysis of their locations employing industrial location theory.

Ge 410 Political Geography.
Cat. I. 3 hrs.
Prerequisites: Ge 101, Ge 102.
Space structures, growth, problems of a nation-state — modern world political problems — studies of a few selected areas.

Ge 420 Economic Geography.
Cat. 2. 3 hrs.
Prerequisites: none.
Geographic factors contributing to the localization of economic activities; distribution, production, and trade.

Ge 430 Urban Geography.
Cat. I. 3 hrs.
Prerequisite: none.
Geographic aspects of origin, growth and development of cities and urbanized areas; factors influencing the location of cities and central places; internal structure, functions, problems and urban planning.

Ge 440 Introduction to Urban & Regional Planning.
Cat. 2. 3 hrs.
Prerequisites: permission of Instructor.
Historical aspects of changing land use, evolution of community form and the development of urban and metropolitan areas; planning techniques and legal tools for guidance and control of contemporary urban and metropolitan areas development; special consideration given to problems of land use, housing, transportation and related urban elements.

Ge 441 Land Use Planning Workshop.
Cat. I. 3 hrs.
Prerequisites: Ge 440: Introduction to Urban & Regional Planning or permission of Instructor.
Students will become involved in a land use planning project for a local community. The project will involve the practical application of land use planning principles acquired in Ge 440: Introduction to Urban & Regional Planning. The planning projects will focus on the natural resource aspects of comprehensive community planning that will enable the community to meet the challenge of making sound community development decisions.

Ge 450 Readings and Directed Research.
Cat. I. 3 hrs.
Prerequisites: Ge 101, Ge 102, Ge 210, Ge 351, Ge 352, and consent of the department.
Directed study on selected topics; open to Senior majors.

Ge 460 Geography Internship.
Cat. 3. 1-6 hrs.
Prerequisites: All department requirements for major fulfilled, and approvai of the department.
Students assigned to various government and private agencies, and work under joint supervision of agency supervisor and faculty supervisor; activities or project student undertakes relate to the practical application of Geography-Geology.

Ge 470 Selected Topics in Geography.
Cat. 2. 3 hrs.
Topic or subject to be announced in advance; topic to be relevant to student needs and interest and availability of professor. Topic will involve lectures and discussions and/or field work.

Health Education

Professor:
Read

The Department offers a major and a minor in Health Education with the specific purposes of providing the opportunity for the entire college community to participate in learning experiences through the medium of broad offerings in health education;

Providing the student in other colleges and schools in the Consortium with courses which deal directly with his or her health needs and interests.

Providing professional curricula in health for educational and service personnel.

The focus of the Department is on three levels of human activity: 1) the cognitive level, where the program's format will be essentially factual in nature and will be designed primarily to increase knowledge and understanding about health and health education; 2) the affective level, where the program will attempt to focus on positive attitudes, feelings, and values; and, 3) the behavioral level, where the program's primary concern will be in altering or strengthening modes of positive health behavior.

Degree Program

Students in the Department of Health Education may enroll in one of the following degree programs; Major or Minor in Health Education, Teacher certification, B.A./B.S. degree without teacher certification.

Admission ot Department

Admission to the college or the taking of courses in the department, *does not* imply admission to candidacy for a degree in Health Education.
Whether or not a student shall be admitted to candidacy is determined by the faculty after two semester's work (or the equivalent for part-time students). The faculty's decision will be based on a formal application by the student; class performance, grade point average (2.5 or better); as well as other pertinent factors.

General Requirements

Initiative for checking curricular and other requirements rests solely with the student. Advisers will be assigned and students are urged to check with them regularly.

In addition to general and department requirements, the college imposes certain standards and requirements which each student must meet.

Minor in Health Education

Eighteen semester hours of credit are generally required for a Minor in Health Education. Courses required for a minor in Health Education are Personal Health, Consumer Health, Health and Nutrition, Drugs and Society, 6 hours of electives in health education.

Major in Health Education

Students who elect to major in health education will have one of three options open to them; to major in school health education with teacher certification; major in health education without teacher certification; major in health counseling. All three majors require 39 hours of course work.

RECOMMENDED PROGRAM FOR HEALTH EDUCATION:

Core Courses to be Taken Freshman Year
(All Students)

FRESHMAN

Fall Semester

English Composition I - 3 credits
General Psychology I - 3 credits
Introduction to General, Organic & Biochemistry I (with Laboratory) - 4 credits
Human Anatomy & Physiology I (with Laboratory) - 4 credits
Statistics - 3 credits

Spring Semester

English Composition II - 3 credits
Introduction to Sociology - 3 credits

Introduction to General, Organic & Biochemistry II (with Laboratory - 4 credits
Human Anatomy & Physiology II (with Laboratory) - 4 credits
General Psychology II - 3 credits

COURSES TO BE TAKEN NEXT THREE YEARS DEPEND ON MAJOR CHOSEN

School Health Educator
39 Hours required

First Aid
Personal Health
Health & Nutrition
Drugs & Society
Consumer Health
Group Processing in Health Education

Health Educator
39 Hours required

Personal Health
Health & Nutrition
Drugs & Society
Consumer Health
Group Processing in Health Education
Community Health Education

Health Counseling
39 Hours required

School Health Counseling
Personal Health
Human Sexual Awareness
Group Processing in Health Education
Drugs & Society
Psychology of Adjustment
General Psychology I
Clinical Psychology

CERTIFICATION REQUIREMENTS:

Area I: Foundations

One of the following three courses are required:

Education Psychology
History & Philosophy of Education
Adolescent Psychology — Also:
Education of the Self or Independent study

Area II: Curriculum and Instruction

The following two courses are required:

Teaching Methods and Skills in Health Education
Principles & Curriculum of Secondary Education
Also: Evaluation of Classroom Learning or Teaching for Creativity

Area III: Issues and Orientation to Total School Program

Principles and Curriculum of Secondary Education

Area IV: Field Experience

Student Teaching

ELECTIVES IN DEPARTMENT OF HEALTH EDUCATION

Human Sexual Awareness
Human Sexuality and Sex Education
Values Clarification in Health Education
Health Counseling
Community Health Education
Strength Training in Health
Mental Health Education in the Schools
Critical Issues in Health
School Health Education for Elementary Teachers
School Health Coordinator
Safety and Accident Prevention
Departmental Workshop

SOME SUGGESTED ELECTIVE OUTSIDE DEPARTMENT

Media of Communication
Philosophy of Education
Microbiology
Epidemiology, Disease & Mankind
Medical Sociology
The Sociology of Mental Health
Sociology of the Family
Human Sexuality
Diseases of Mankind
Psychology of Adolescence

HEALTH EDUCATION TRAINEE PROGRAM

GRADUATION

To assure a balance of classroom and practical field experience, the Department of Health Education's special *Health Education Trainee Program* will be an integral part of the major program in health education.

In this program, undergraduate students utilize field trips to develop community awareness of health needs and problems, participate in school community planning for health education programs, learn to provide information about community health programs via effective use of all elements of the mass media, and develop an awareness of how to combat state, national and international health problems.

Among the health problems studied in field trips to local and state agencies are mental health, alcoholism, geriatrics, tuberculosis, heart disease, cancer, traffic safety and narcotics.

STUDENT TEACHING

Students who desire to receive teacher certification in School Health Education will be required to meet certain requirements.

After admission to the Program, the following requirements must be satisfied before the student is eligible for student teaching.

1. A grade of "C" or better in all courses to be counted toward the completion of requirements in a teaching field or specialization area and professional education.
2. A minimum of 18 hours in the subject area to be taught, with a grade-point average of not less than C+.

Students admitted to the Teacher Education program are subject to all prevailing academic and social regulations and policies of the College in addition to those specified for the various certificate requirements, the student must satisfy the degree requirements of his or her major department (in this case Health Education) and the College requirements of a minor or second major. The teacher education advisor in Health Education and the Secondary Education Coordinator will assist the student in meeting all requirements and supervision during actual student teaching.

At the present time arrangements have been made to place student teachers in the towns of Worcester and Needham.

COURSE DESCRIPTIONS

He 100 Personal Health.
Cat. I. 3 hrs.
Prerequisite: none.
Impact of modern-day life on human health; the potential of heart disease, drugs, nutrition, diet and weight control, smoking, daily stress, and how they contribute to or detract from the individual's optimal level of health.

He 110 Drugs and Society.
Cat. I. 3 hrs.
Prerequisite: none.
Current information on use and abuse of psycoactive drugs (including alcohol and tobacco) in current society; individual student to determine what, for him, constitutes use, misues of abuse of psycoactive substance.

He 120 Health and Nutrition.
Cat. I. 3 hrs.
Prerequisite: none.
Information regarding basic nutritional requriements and how they contribute to maintenance of good health; study of obesity-diet-exercise, heart disease and diet, health foods and quackery.

He 130 Human Sexual Awareness.
Cat. I. 3 hrs.
Prerequisite: none.
Focus on sexual awareness and the kinds of sexual attitudes and messages that are conveyed, both verbally and non-verbally, by one to another; emphasis will be placed on examining attitudes and previous learning about sex and sexuality.

He 200 Consumer Health.
Cat. I. 3 hrs.
Prerequisite: none.
The consumer of health-related products face a dilemma as they are barraged by conflicting messages of and about health; explores all facets of consumer health including — health advertising, purchasing of health products, quackery, choosing and using medical services and about health insurance.

He 310 Human Sexuality and Sex Education.
Cat. I. 3 hrs.
Prerequisite: He 130.
Focus on the need for and implementation of a sexuality education program in the schools; techniques and methods for this subject area in the elementary /secondary school emphasized.

He 320 Mental Health Education in the Schools.
Cat. I. 3 hrs.
Prerequisite: None.
Students will know what constitutes good mental health and the "skills" and "events" that can be effected in the classroom to enhance mental health; be able to demonstrate skills in communicating, valuing, feelings identification, trust building, group facilitating, and positive self-concept building; and be able to plan events (lessons, classroom setting, grading, positive atmosphere building, etc.) that tend to foster positive mental health in children and adults.

Ed 395 Teaching Methods and Skills in Health Education.
Cat. I. 3 hrs.
Prerequisite: He 100.
For those interested in teaching health at the elementary secondary level; focus on the role and responsibilities of the classroom teacher as a major force in the creative teaching-learning environment.

He 398 School Health Education for Elementary Teachers
3 hrs.
Prerequisite: He 100.
The role of the elementary teacher in school health education, includes health services, environment, scope and sequence in instruction and community resources.

He 400 Group Processing in Health Education.
Cat. 2. 3 hrs.
Prerequisite: He 100 and He 130.
Development of skill and knowledge of group processes in human relationships; primarily an experiential class in which students can discover potential and worth in every individual and in the ways he/she feels and learns; content and emphasis varies from year to year; focus on various issues in health education (i.e., drugs, sex, emotional health, living in our environment, nutrition, etc.)

He 415 Aging, Death, and Suicide Education.
Cat. I. 3 hrs.
Prerequisite: He 100.
An understanding of the relationship of death to life, and life to death; discussion of the meaning of aging and death to man; bereavement (coping with the death of another) and suicide, that is, understanding the ecology, etiology, and prevention of suicide.

He 420 Health and Fitness in Sports.
Cat. 3. 3 hrs.
Prerequisites: Bi 161-2.
This course studies and assesses the impact of modern day life on human health and fitness in sports. Topics will include nutrition, special health problems, exercise and rehabilitation.

He 440 Values Clarification in Health Education.
Cat. I. 3 hrs.
Prerequisites: He 100 and He 130.
The importance of setting up a climate conducive to group sharing; and, second, the necessity and techniques of values clarification in education; students will be asked to take part in and design their own values model for use in teaching.

He 450 Independent Study in Health Education.
Cat. 3. 1-3 hrs.
Prerequisites: He 100, He 110.
Independent study in health education under the direction of a faculty member in the department.

He 500 Health Counseling
Cat. 2. 3 hrs.
Prerequisite: He 100.
Designed to make prospective teachers and others aware of the need for one-to-one health counseling, as well as the use of counseling techniques in teaching. Course will cover theories of counseling; establishing a climate for effective counseling; an overview of counseling approaches; counseling techniques and strategies; typical problems in counseling; application of techniques to teaching; and, evaluation.

He 505 Critical Issues in Health.
Cat. 3. 3 hrs.
Prerequisite: He 100.
Directed to the needs of teachers, both current and future, in two important ways: to help gain a fix on some of the critical issues in our society today and to indicate some possible directions in which the health teacher can go to confront the issues that are being raised.

He 510 Strength Training in Health.
Cat. 2 3 hrs.
Prerequisites: He 100 and Ed 395.
Students will be able to identify their weaknesses and strengths in teaching, and the underlying personal traits that lead to them; be able to effectively guide others; be able to express feelings after engaging in a "stressful" teaching/learning situation.

He 515 School Health Coordinator.
Cat. 3. 3 hrs.
Prerequisite: He 100 and Ed 395.
Designed for those students who may find themselves in the position of health coordinator. The course will explore role and responsibilities of health coordinator.

He 520 Community Health Education.
Cat 3. 3 hrs.
Prerequisite: He 100.
The theoretical framework, concepts and methods which form the basis for community health education programs. Opportunity for observation of ongoing community health education programs.

He 525 Departmental Workshops in Health Education.
Cat. 2. 1-3 hrs.
Prerequisite: He 100
Designed primarily to offer students an opportunity to view and/or explore new, innovative teaching techniques in health education. Workshops may last a day, a week, etc.

He 528 Safety and Accident Prevention.
Cat. 3. 3 hrs.
Prerequisite: He 100.
Principles and philosophy of safety and accident prevention in the home, at work, at school and in public activities. Includes emergency procedures and preparation for major disasters.

History and Political Science

Professor:
Spector, Walett

Associate Professor:
Cohen, McGraw, Shea, Yuan

Assistant Professor:
Delaney, Goldsmith, Kane, Minasian, Mitchell, Saliba, Twiss

The Department of History offers a wide variety of courses in the field of American, European, Asian, Latin American and Middle Eastern studies. In addition to the major and minor offered in these areas, a minor in political science is also available. This enables the student to elect courses dealing with national, state, and comparative government, international relations, and related fields. The department offers a pre-legal program and a program in American studies. The American Studies Program provides the students with internship training in historic restoration or museum service, historic records, management and archival work, and an internship in public service.

The philosophy of the department is to provide the student with extensive course offerings to enable him to cope with a complex and ever-shrinking world. Course work in history and political science can prepare the student for a variety of professional and occupational opportunities. Positions held by graduates in this field include teachers, librarians, archivists, curators of museums, secretaries of institutions, social workers, journalists, foreign correspondents, military correspondents, civil servants and lawyers.

It is expected that the department will grow in size according to student needs; thus, the motto of the department — "To serve and to enlighten."

Requirements for History Majors

History majors, are required to take the following courses: History of Western Civilization I and II, United States History I and II, two other United States History courses, two courses in European History, two courses in non-European, non-U.S. History (Asia, Latin America, Middle East, Africa) and any other two history courses. A total of 36 semester hours in history is required for a major.

RECOMMENDED PROGRAM FOR HISTORY MAJORS (B.A./B.S.)

FRESHMEN

Fall Semester

Western Civilization I
Principles of Political Science
U.S. History I
English Comp.
Principles of Physical Geo. (or another Group IV offering).

Spring Semester

Western Civilization II
U.S. History II
American Government

SOPHOMORES

Fall Semester

History Electives**

Spring Semester

History Electives**

JUNIORS

Fall Semester

History Electives**
Non-European, non-U.S. history course (Asia, Africa, Latin America, Middle East)

Spring Semester*

History Electives**
Non-European, non-U.S. history course (Asia, Africa, Latin America, Middle East)

SENIORS

Fall Semester*

History Electives**
U.S. History Elective

Spring Semester

History Electives**
U.S. History Elective

* If the student's minor is Secondary Education, these two semesters must be used to meet the minor requirements (see secondary education).
** These electives should be selected with the advice of the Faculty Advisor and should depend on the student's goals.

REQUIRED PROGRAM FOR HISTORY MAJOR

Western Civilization I & II
U.S. History I & II; two history electives

MAJOR IN HISTORY – AMERICAN STUDIES

An Introduction to Career Opportunities in:
Historic Museums
Historic Restorations
Archival Work
Public Service

Today's rapidly changing society provides many challenging opportunities for professional careers. This program will make students aware of social needs and assist them in selecting and exploring an occupational area of interest. The History – American Studies Program will enable students to prepare for satisfying and rewarding careers in areas of their choice.

A broad and general background of history political science and related courses will permit students to better understand contemporary social conditions in the content of the American heritage. Students will be encouraged to pursue their individual interests in a very flexible academic program. In their Junior and Senior years History – American Studies majors will have the opportunity for independent study and to engage in off-campus internships.

After individual counseling, students will be able to work as interns in such institutions as historic museums, historic restorations, history libraries, Archives, or in any one of a great variety of agencies in state, county and local government.

For further information contact: Mr. Joseph Scannell or Dr. Francis Walett.

A Major in History – Pre-Legal (Special Preparation for Law School)

The new-legal program at Worcester State College is designed to give the student who is planning to enter law school one of the richest most solid and exciting four-year preparations of any institution. The pre-legal program at Worcester State:

Offers an interdisciplinary, cross-department core program consisting of history, political science, chemistry, physics, biology, mathematics, sociology, economics, psychology, and accounting:
Includes within this core program a minimum of 12 hours in constitutional history and a minimum of 15 hours of political science;

Enables the student to major in history and minor in both political science and physical science or administrative studies;

Permits the student, in addition to his core program, to select the remainder of his required hours for the Bachelor of Arts degree from a wide variety of subjects:

Allows the student, during the first two years of undergraduate work to gather some insight into the work of attorneys so that judgment may be made as whether or not he wishes to make a career in the legal profession.

Places him in an environment that will aid him in adjusting to and getting the most out of his future law school subjects;

Stresses the opportunity to cross-register through the Worcester Consortium for Higher Education at various other area institutions;

Develops personal abilities by providing students with proper counseling both in the general area of education and in legal education;

Provides the type of background that encourages the sort of independent thinking that has characterized the great lawyers of the past.

Should you wish further information, please contact: Dr.Robert M. Spector, Esq., Pre-Legal Advisor, Department of History and Political Science, Worcester State College.

THE POLITICAL SCIENCE MINOR

The minor can be designed to provide a fundamental understanding of the principles and problems of a science whose relevance to contemporary life is immediate. It is suggested for a student interested in such fields of work as government service, international affairs, graduate study, journalism, law, teaching and business.

At the present time, political science is offered as a minor and is coordinated by the History Department. Should a student be interested in minoring in Political Science, he should consider the recommended program as suggested below. The History Department will gladly assist any student in designing a political science minor program which will accomplish the student's goals.

REQUIREMENTS FOR A POLITICAL SCIENCE MINOR

Po 101 Principles of Political Science plus 15 other hours of Political Science courses for a total of 18 hours.

COURSE DESCRIPTIONS

Hi 101 History of Western Civilization I.
Cat. I. 3 hrs.
Prerequisite: none.

Hi 102 History of Western Civilization II.
Cat. I. 3 hrs.
Prerequisite: none.
A survey of the great ideas in the history of European civilization that has shaped the modern mind. History majors must elect Hi 101 and 102.

Hi 111 United States History I.
Cat. I. 3 hrs.
Prerequisite: none.

Hi 112 United State History II.
Cat. I. 3 hrs.
Prerequisites: none.
From colonization to the New Deal; political, social, economic, diplomatic and cultural movements.

Hi 200 Colonial History I.
Cat. I. 3 hrs.
Prerequisites: Hi 111, Hi 112.

Hi 201 Colonial History II.
Cat. I. 3 hrs.
Prerequisites: Hi 111, Hi 112.
European background and reasons for American colonization, intercolonial rivalries, and British colonial policy.

Hi 202 Early National Period of the U.S. – 1783-1829.
Cat. 2. 3 hrs.
Prerequisites: Hi 111, Hi 112.
The war for independence, the confederation, the Federalist and Jeffersonian regimes and the rise of American nationality.

Hi 203 The Age of Jackson.
Cat. 3. 3 hrs.
Prerequisite: none.
Political, social, economic and intellectual developments from 1820-1848.

Hi 204 The Civil War and Reconstruction.
Cat. I. 3 hrs.
Prerequisite: none.
Sectionalism, slavery and modern industrial warfare and their impact on the political and racial fabric of America.

Hi 205 American Indian, Past and Present
Cat. I. 3 hrs.
Prerequisite: none.
The part played by the American Indian in the development of America; the encounter between Indian and European civilization and the inter-relationship between Indian culture and Indian history.

Hi 206 Populism and Progressivism – 1877 – 1914.
Cat. 2. 3 hrs.
Prerequisite: none.
America's transition from a developing nation to a world power; immigration urbanization, industrialization; development of economic and social life.

Hi 207 The American West: Myth & Reality.
Cat. 2. 3 hrs.
Prerequisite: none.
The course is designed to make known to students the great story of the development of the American West and its impact on the American character, to compare the widely held dreams of the West with the historical fact, and to arouse in Eastern students a desire to know more of this historic section of the land.

Hi 208 American Immigrant History.
Cat. 1. 3 hrs.
Prerequisite. None.
The process of immigration; the impact of the immigrant on American life and its effect on him.

Hi 209 Afro-American History.
Cat. 3. 3 hrs.
Prerequisites: Hi 111, Hi 112.
The Black man in American society from slavery to the present; contributions to American life.

Hi 210 Psychological Foundations of Current History.
Cat. I. 3 hrs.
Prerequisites: none.
An attempt to ascertain certain climates of opinion within which far-reaching decisions were both made and responded to.

Hi 211 History of U.S. Foreign Policy I.
Cat. I. 3 hrs.
Prerequisite: none.

Hi 212 History of U.S. Foreign Policy II.
Cat. I. 3 hrs.
Prerequisite none.
Determination and implementation of U.S. foreign policy through detailed historical analysis of significant themes and basic concepts.

Hi 213 Twentieth Century U.S. History.
Cat. I. 3 hrs.
Prerequisite: none.
Contemporary American civilization, from America in World War I up to America in the Cold War.

Hi 214 U.S. Labor History - 1820's - 1955.
Cat. 2. 3 hrs.
Prerequisites: Hi 111, Hi 112.
Survey of labor in the U.S.; analysis of the labor force; ideologies which competed for adherents among the labor population; labor's role in shaping America.

Hi 215 American Intellectual History.
Cat. 3. 3 hrs.
Prerequisite: American Literature.
Puritanism, the Enlightenment, Romanticism, Darwinism, Pragmatism, Naturalism, Fundamentalism, the Liberal-Progressive Ethic and the New Left.

Hi 216 Economic History of the U.S.
Cat. I. 3 hrs.
Prerequisite: none.
American economic history from the 17th century to the present; economic problems and policies particularly since World War II.

Hi 217 U.S. Social History.
Cat. 2. 3 hrs.
Prerequisite none.
Diverse elements of society and culture such as family history, reform, American architecture and the frontier.

Hi 218 U.S. Constitutional History I.
Cat. I. 3 hrs.
Prerequisite: none.

Hi 219 U.S. Constitutional History II.
Cat. I. 3 hrs.
Prerequisite: none.
The development of American constitutional principles from colonial times through the present day.

Hi 220 Ancient History.
Cat. I. 3 hrs.
Prerequisites: Sophomores, Juniors, and Seniors.
Intensive study of Egypt; the age of Pericles, Alexander and Augustus; industry, government, art, literature and society of each period.

Hi 221 Renaissance and Reformation.
Cat. 3. 3 hrs.
Prerequisite: none.
A factual survey of Europe from the middle of the 13th to the middle of the 16th century.

Hi 222 The Age of Louis XIV and the Ancient Regime.
Cat. 3. 3 hrs.
Prerequisites: Juniors and Seniors, or consent of Insturctor.
Seventeenth and Eighteenth century France down to the French Revolution; Divine Right, domestic and foreign polciies of Louis XIV; subsequent decline of France

Hi 223 History of Modern France.
Cat. 3. 3 hrs.
Prerequisites: Juniors and Seniors, or consent of Instructor.
From the Revolution to the Fifth Republic; changes in French institutions due to social, economic and political forces.

Hi 224 English History I.
Cat. 2. 3 hrs.
Prerequisites: Sophomores, Juniors, and Seniors.

Hi 225 English History II.
Cat. 2. 3 hrs.
Prerequisite: Hi 224.
Development of England's political structure; growth of the party system, evolution of the cabinet, development of English Society.

Hi 227 Europe in the 19th Century.
Cat. 2. 3 hrs.
Prerequisite: none.
Dictatorship of Napoleon and his reorganization of Europe; liberalism and nationalism; second French Empire; unification of Italy and Germany.

Hi 229 History of Modern East Central Europe.
Cat. 3. 3 hrs.
Prerequisites: Hi 101, Hi 102 or Hi 103, Hi 204.
Political developments in East Central Europe from the partition of Poland to World War I; the Balkans under Ottoman rule; russia's influence on historic events in the region.

Hi 230 Diplomatic History of Modern Europe.
Cat. 3. 3 hrs.
Prerequisite: none.
Causes of World War I and II; international relations of the great powers; the alliance system, collective security, totalitarianism, economic depression and technology.

Hi 231 European Intellectual History I.
Cat. 2. 3 hrs.
Prerequisites: Juniors and Seniors

Hi 232 European Intellectual History II.
Cat. 2. 3 hrs.
Prerequisites: Juniors and Seniors.
The main theoretical works, philosophic, psychological and scientific from Plato to the Enlightenment.

Hi 233 History of Latin America.
Cat. 3. 3 hrs.
Prerequisites: One year college level history, or consent of Instructor.
Survey of Latin American history stressing the evolution of cultural and political patterns which define Latin American societies.

Hi 234 Russian History I.
Cat. I. 3 hrs.
Prerequisite: one year History.

Hi 235 Russian History II.
Cat. I. 3 hrs.
Prerequisites: one year History.
Major political, intellectual and social currents of Russian history from Kievan times to the present; Russian Marxism, Leninism, Stalinism, and Russia and the Cold War.

Hi 236 Modern Far Eastern History I.
Cat. I. 3 hrs.
Prerequisites: Sophomores, Juniors and Seniors.

Hi 237 Modern Far Eastern History II.
Cat. I. 3 hrs.
Prerequisites: Sophomores, Juniors and Seniors.
The great civilizations of China and Japan, as well as Korea and Southeast Asia; the complex problems of the Far East and of American policty there.

Hi 238 History of Political Theory I.
Cat. 2. 3 hrs.
Prerequisites: Juniors and Seniors, or consent of Instructor.
An analysis of theoretic origins in classical Greece; intensive study of major political thinkers from Machiavelli to Rousseau

Hi 239 History of Political Theory II.
Cat. 2. 3 hrs.
Prerequisites: Juniors and Seniors, or consent of Instructor.
Continuation of Hi 238; political thought of the Enlightenment and revolutionary era; the utilitarian, nationalist and socialist schools; facism, communism and liberalism.

Hi 241 English Constitutional History.
Cat. I. 3 hrs.
Prerequisites: Sophomores, Juniors and Seniors.
The development of English constitutional history and principles from the conquest by the Anglo-Saxons through the present day.

Hi 242 Early Modern Europe.
Cat. 2. 3 hrs.
Prerequisite: none.
A general overview of the dynamic forces that shaped Europe since the Reformation; the emergence of the major states system; rise of urban classes; scientific revolution;

Hi 243 European Urban History I
Cat. 3. 3 hrs.
Prerequisite: none:
The process of accelerating urbanization since the 18th century in Europe; cultural social, economic and political aspects of urban life; and understanding of the great problems of the city

Hi 244 American Urban History.
Cat. 2. 3 hrs.
Prerequisite: none.
The process of accelerating urbanization since the 19th century in America; cultural, social, economic and political aspects of urban life; and understanding of the great problems of the city.

Hi 245 History of Modern Germany I.
Cat. I. 3 hrs.
Prerequisite: none.
The origins of Brandenburg, the Protestant Reformation, Counter-reformation, the emergence of Prussia, the Metternich years, the revolution of 1848, the army reform, Bismarck, and the Treaty of Frankfort (1871).

Hi 246 History of Modern Germany II.
Cat. I. 3 hrs.
Prerequisites: none.
The establishment of the German Empire, the policies of Bismarck, Hohenlohe, von Bulow and Bethmann-Holleweg. WWI, the Weimar Republic, and rise of Hitler, WWII. German defeat, Allied occupation, and the emergence of the two Germanies.

Hi 247 Twentieth Century Europe I.
Cat. I. 3 hrs.
Prerequisites: Hi 101, Hi 102.
The period from 1914 to 1939; the policies and diplomacy of WWI, its consequences, the World Depression, the rise of totalitarian regimes, and the years of Appeasement.

Hi 248 Twentieth Century Europe II.
Cat. I. 3 hrs.
Prerequisites: Hi 101, Hi 102.
The period from 1939 to the present; the German attack on Poland, post-WWII problems, the origin, development and confrontation of the Cold War, the liquidation of the colonial empires, the transformation of Western and Central Europe, the Marshall Plan and the Common Market.

Hi 261 Middle East History I.
Cat. 2. 3 hrs.
Prerequisites: none.

Hi 262 Middle East History II.
Cat. 2. 3 hrs.
Prerequisite: none.
The rise and expansion of Islam, the Caliphate, the Muslim civilization, the East-West confrontation; the rise and decline of the Ottoman Empire, its institutions, European colonialism, Ottoman reform and problems, World War I, and the emergence of new independent states.

Hi 263 20th Century Middle East.
Cat. I. 3 hrs.
Prerequisite: none.
The revolution and policies of the Young Turks, the involvement and disintegration of the Ottoman Empire in World War I, and the birth of the modern Middle East States.

Hi 270 Historical Quantification.
Cat. 3. 3 hrs.
Prerequisites: recommended for juniors and seniors.
The teaching of theoretical statistical procedures directly related to the study of history, and the actual use of the new computer facilities to manipulate and test newly learned procedures.

Hi 318 American Historic Museums and Restorations.
Cat. 3. 3 hrs.
Prerequisite: Consent of Instructor.
Development of historic museums and restorations in this country; problems associated with the creation, development and operation of these organizations; special emphasis on New England; field trips.

Hi 500 Independent Study in History.
Cat. I. 1-3 hrs.
Prerequisites: Approval of department or consent of Instructor.
A special opportunity for advanced students to pursue a topic of special interest; investigations into original and authoritative secondary sources; extensive readings and periodic consultations.

Hi 510 Seminar in American Historiography.
Cat. 3. 3 hrs.
Prerequisite: Prior written consent of Instructor.
Intensive study of original sources and preparation of a research paper; analysis of major schools of historical.thought.

Hi 520 Seminar in American Constitutional History.
Cat. 3. 3 hrs.
Prerequisite: Prior written consent of Instructor.
Reading, research and discussion on a phase of American constitutional history; an original paper of significant scholarship is required.

Hi 530 Seminar in European Historiography.
Cat. 3. 3 hrs.
Prerequisite: Written consent of Instructor.
To investigate schools of historical thought, attitudes and methods, with research emphasis on the writing of history and discussion of the findings of students.

Hi 600 Internship in American Studies.
Cat. 1. 6-12 hrs.
Prerequisite: consent of Instructor.
Internship at an historic museaum, archives, restoration, etc.; performing a vareity of tasks at a beginning professional level in cooperating institutions; supervision by History Department and officials of cooperating organization.

Political Science

Po 101 Principles of Political Science.
Cat. I. 3 hrs.
Prerequisite: none.
An introduction to political analysis; the study of the problems of natural law, power justice and liberty.

Po 102 Constitutions: U.S. and Massachusetts.
Cat. I. 3 hrs.
Prerequisite: none.
The origins and development of the U.S. Constitution and the Massachusetts Constitution; designed to meet the requirements of Chapter 73, Section 2A of the General Laws of the Commonwealth more deeply than Po 110 and more directly than Hi 111 and Hi 112. Not for history majors.

Po 110 American Government.
Cat. 1. 3 hrs.
Prerequisite: Po 101.
Our national government; its federal form, its system of checks and balances in national and state governments, its evolutionary nature.

Po 115 State and Local Government.
Cat. I. 3 hrs.
Prerequisite: Po 101.
The impact of the community upon intergovernmental relations; development of metropolitan problems; the making of public policy and citizen control.

Po 120 Comparative Politics I.
Cat. I. 3 hrs.
Prerequisite: Po 101.

Po 121 Comparative Politics II.
Cat. I. 3 hrs.
Prerequisite: Po 101.
The political systems of major European and non-European systems; historic development of these systems and their ideologies.

Po 201 International Relations I.
Cat. I. 3 hrs.
Prerequisite: Po 101.

Po 202 International Relations II.
Cat. I. 3 hrs.
Prerequisite: Po 101.
Current world affairs; elements of national power and the factors that influence power and the formation and execution of foreign policy.

Po 210 U.S. Constitutional History.
Cat. I. 3 hrs.
See Hi 218 & Hi 219 for course descriptions.

Po 211 History of U.S. Foreign Policy I.
Cat. I. 3 hrs.
Po 212 History of U.S. Foreign Policy II.
Cat. I. 3 hrs.
See Hi 211 & Hi 212 for course description.

Po 215 Political Parties and Pressure Groups.
Cat. I. 3 hrs.
Prerequisites: Po 101 or consent of Instructor.
The functions, organization and methods of political parties; the role of interest groups in the American political process.

Po 217 The Legislative Process.
Cat. 3. 3 hrs.
Prerequisites: Po 101, Po 110 or consent of instructor.
Nature and functions of the U.S. Congress; legislative campaigns, the politics of law making, congressional investigation and major problems of Congress.

Po 220 Government and Politics of Latin America.
Cat. 3. 3 hrs.
Prerequisites: Po 101 or consent of Instructor.
The political organization problems and possibilities of some representative Latin American countries; crisis areas such as Cuba and American responses to these crisis areas.

Po 230 The Politics of the Middle East I.
Cat. I. 3 hrs.
Prerequisites: Po 101 or consent of Instructor.

Po 231 The Politics of the Middle East II.
Cat. I. 3 hrs.
Prerequisites: Po 101 or consent of Instructor.
The Eastern Mediterranean world in the 20th century; problems of the new nations of the area and conflicts among them; the role of the major powers in this region.

Po 238 History of Political Theory I.
Cat. 2. 3 hrs.
Po 239 History of Political Theory II.
Cat. 2. 3 hrs.
Po 238 — See Hi 238 for course description.
Po 239 — See Hi 239 for course description.

Po 250 Soviet Government and Politics.
Cat. 1. 3 hrs.
Prerequisites: Po 101 or consent of Instructor.
The nature of the Soviet system of government; the dynamics of modern totalitarian dictatorship and the role of the party as reflected in domestic political developments.

Po 251 Comparative East European Government and Politics.
Cat. I. 3 hrs.
Prerequisites: Po 250 or Hi 229.
An analysis of post-WW II East European governments and political developments in the area; patterns of Czechoslovak, Hungarian, Bulgarian, Roumanian, Yugoslav and Albanian regimes; inter-bloc relations; and relations of these countries with the Soviet Union.

Po 255 Soviet Foreign Policy.
Cat. I. 3 hrs.
Prerequisites: Po 101 or consent of Instructor.
Analysis of the history of Soviet foreign relations under Lenin, Stalin, Krushchev and Brezhnev; the role of ideology in the formulation and implementation of Soviet foreign policy.

Po 260 Government and Politics of China.
Cat. 3. 3 hrs.
Prerequisites: Po 101 or consent of Instructor.
Political and international developments of contemporary China; communist ideology and instruments of power.

Po 280 American Foreign Policy Since the Cold War.
Cat. 3. 3 hrs.
Prerequisites: Hi 112 or Po 101, or consent of Instructor.
The nature of national interests and the problems of implementation; analysis of selected foreign policy formulations under recent presidents.

Po 520 Seminar in American Constitutional History.
Cat. I. 3 hrs.
See Hi 301 for course description.

Po 540 Seminar in Revolution.
Cat. 3. 3 hrs.
Prerequisites: Po 270 or consent of Instructor.
In-depth research and discussion; each student selects an aspect of revolutionary events or components and explores it within and without the classroom.

Management

Professor:
Juralewicz

Associate Professor:
Bornfriend

Assistant Professor:
Endriga

Instructor:
McEachern

The Department of Management offers an upper level program of professional studies in Management based on a solid lower level liberal arts background. The rapidly escalating demand for professional administrators in today's society reflects the ever increasing need for individuals able to act effectively as initiators of progress, planners and decision-makers, and managers of operations of the organizations within the society. Managers — today's and the future's — will continue to operate in environments of ever increasing complexity and scope. A manager's technical expertise, interpersonal skills and precision in decision-making are main determinants of an organization's survival and goal achievement.

A career in Management is a highly competitive and severely demanding life's vocation. It does, however, offer to the right individual the opportunity for a high degree of personal life-quality, social fulfillment and material success.

THE DEGREE OBJECTIVE

This professional program of studies is designed to instill in the student the necessary drive and initiative, analytical and technical tools, and the interpersonal and social skills to function proficiently in entry level and subsequently middle management level positions. With normal professional upgrading, the Worcester State College graduate may eventually move into upper levels of management.

A student interested in advanced or graduate study in Management has the option to undertake a specialized and rigorous program of study that is designed to increase the individual's ability to compete for admission into the best schools of Management in the country.

PROGRAMS IN MANAGEMENT STUDIES

The Department of Management offers a wide selection of programs in Management Studies:

a) B.S./Major in Management with concentration in:
   Business Administration
   Public Administration
   Health Administration
b) B.S./Major in Management with a concentration in Business Administration and:
   Studies with emphasis in General Management
   Accounting/Finance Specialization (CPA Preparatory)
   Studies with emphasis in Organizational Behavior
   Studies with emphasis in Production and Operations Management
c) B.S./Major in Management and electing any concentration may take an advised course of study to prepare for graduate work in Management.
d) B.S.or B.A./Minor in Management.

ADMISSION INTO PROGRAMS

All students desiring admission into any of the programs in Management Studies must submit an Application for Admission-available from the Department of Management — after completion of three college credits or its equivalent in each of the following:

Mathematics
Computer Science
Accounting
any other prerequisite course

Applications are generally evaluated and students offically admitted in the fall semester of the Sophomore Year. Bases for acceptance in order of relative weight are as follows:

Overall QPA vis-a-vis Institution earned
QPA of management oriented courses vis-a-vis Institution earned.
Real world experience in management or related field, or
High School GPA and/or SAT percentile
Academic honors
Unusually high motivation to succeed in business

Students are encouraged to request an interview with Faculty of the Department covering admissions.

WAIVERS AND TRANSFER OF CREDITS

Students desiring waivers of course requirements, especially students transfering in from other institutions, are advised to meet with a member of the Department's Admissions Committee. Conditions for granting course waivers are:

Courses earned in Worcester State College or other institutions that satisfy the academic objectives of the courses requested for waiver.
Extensive work experience directly related to the course requested for waiver.

Waivers of course requirements in all programs of Management studies can only be made by the Admissions Committee of the Department of Management.

ACADEMIC REQUIREMENTS

Students in programs in Management are expected to maintain a QPA of 2.7 or better. Individuals dropping below this level are expected to meet with their Advisors for counseling. All required courses, whether prerequisites or part of studies in the major, may not be taken PASS/FAIL, ie., all required courses must be taken for an academic grade. In addition to the maintenance of a high academic standard, the specific requirements for each fo the programs are outlined below:

a) B.S./Major in Management
   22 credits in prerequisites courses
   48 credits in Management required and elective courses
b) B.S. or B.A./Minor in Management
   16 credits in prerequisite courses
   21 credits in required Management courses
   3 credits in a senior level elective

RECOMMENDED PROGRAMS OF STUDY LEADING TO A B.S./MAJOR IN MANAGEMENT

The program of Management studies is composed of the following:

a) The Common Management Core (CMC)
b) Required studies in the Concentration and/or Specialization
c) Elective courses to complete credit hour requirements.

COMMON MANAGEMENT CORE (CMC)

The Common Management Core is a set of selected courses designed to provide the student with a common body of knowledge functional for managers and administrators in the majority of organizations.

The CMC is composed of 22 credits of prerequisite courses (MA 110, 302,250; Cs 150, 210; Mg 110, 111) and 21 credits counting toward the 48 credit hours requirement for a Major in Management.

FRESHMAN

Fall Semester

Ma 110 Algebra/Trigonometry

Spring Semester

Ma 302 Calculus for Management Majors
Mg 220 Introductory Accounting I
Cs 150 Introduction to Computer Science

SOPHOMORE

Fall Semester

Cs 210 Management Data Processing
Mg 111 Introductory Accounting II
Ma 250 Statistics I

Spring Semester

Mg 200 Fundamentals of Management and Organizational Behavior
Mg 320 Managerial Accounting and Budgeting
Ur 101 Introduction to Urban Systems

JUNIOR

Fall Semester

Mg 305 Organizational Dynamics

Spring Semester

Mg 361 Public Management
or
Mg 450 Health Systems in America
Mg 403 Financial Management I*
Mg 315 Quantitative Analysis and Information System*

* These courses are not required for students electing a Concentration in Public Administration. They remain, however, highly recommended courses for the Concentration.

RECOMMENDED COMMON MANAGEMENT ELECTIVES

The last two decades have been characterized by upheavals in the technology and practice of management. Most visible of these is the explosion in the use of quantitative methods of analysis and the transfer of traditionally private sector managerial skills into the public and institutional administration fields. It is not unusual for today's public administrators to use traditional production techniques such as work measurement, network planning models and statistical quality control. Hospital Administators are faced with problems solvable by techniques commonly used in private sector management strategy determination, research and demand forecasting.

The demands on the logic, writing and communications skills of today's managers are increasing daily. With the above considerations in mind, the Department has compiled a list of courses highly recommended as additions to, and supplementary to, the required CMC courses for all students of Management.

Upper Level Management Electives

Mg 306 Principles of Personnel Management
Mg 310 Managerial Accounting and Budgeting
Mg 313 Cost Accounting
Mg 314 Auditing
Mg 320 Business Law
Mg 400 Management and Organization Behavior I
Mg 404 Financial Management II
Mg 405 Marketing I
Mg 406 Marketing II
Mg 407 Fundamentals of Production Management II
Mg 409 Quantitative Analysis and Techniques I: Linear Models for Administration

Mg 410 Quantitative Analysis and Techniques II: Stochastic Models for Administration
Mg 413 Federal Income Taxation
Mg 474 Corporate Law
Mg 490 Administrative Strategy Formulation and Implementation

Other Recommended Electives

Ph 100 Logic, Knowledge and Philosophy
En 304 Technical Writing
Ec 100 Introduction to Macro-Economics
Ec 101 Introduction to Micro-Economics
Ma 251 Introduction to Statistics II
Me 470 Communication Theory
Ec 202 Labor Economics
Ec 205 Monetary Economics
Ec 400 International Trade
Ge 420 Economic Geography
Hi 216 Economic History of the U.S.
Ps 280 Psychology of Learning
Ps 314 Psychological Methods
Ps 350 Introduction to Psychometrics
So 206 Formal Organizations

OPTION 1: CONCENTRATION IN BUSINESS ADMINISTRATION WITH STUDY EMPHASIS IN GENERAL MANAGEMENT

The progress of modern society is dependent in no small measure upon the initiative and enterprise of the business world. The bulwark of our economy rests upon imaginative citizens in all sorts of business enterprises. Business needs energetic and visionary administrators who are trained in sound principles of business and who can bring their training to the development of diverse enterprises, large and small.

The concentration in Business Administration-General Management provides a study of the basic aspects of business in the form of a broad inter-disciplinary choice of courses.

For students interested in studies in greater depth, there are advanced courses in Accounting, Finance, Organizational Behavior, Marketing, Personnel, Production Management and Quantitative Analysis.

In addition to the required courses in the CMC, the student must complete the required courses listed below and 15 credits in upper-level Management courses, preferably from the list of recommended electives for the Concentration.

Ec 203 Industrial Organization
Mg 300 Problem-Solving in Organizations
Mg 405 Marketing I
Mg 490 Administrative Strategy: Formulation and Implementation

Option 1A: Concentration in Business Administration with a Specialization in Accounting/Finance

This program is designed for students interested in careers in either of these basic functional areas. It is intended to provide the operational skills necessary for immediate entrance to these fields after graduation.

It is also intended to provide a foundation for students interested in further study. One additional year of graduate level accounting courses should be sufficient for those students interested in taking the CPA examination.

In addition to the required courses in the CMC and (Option 1) Business Administration-General Management, students pursuing the Accounting/Finance Specialization must complete 15 credit hours from among the courses listed below. The student has no further requirement for the Major in Management.

Mg 314 Auditing
Mg 320 Business Law
Mg 413 Federal Income Taxation
Mg 404 Financial Management II
Mg 415 Securities Analysis I
Mg 416 Securities Analysis II
Mg 474 Corporate Law
Ec 205 Monetary Economics

Option 1B: Concentration in Business Administration with Study Emphasis in Organizational Behavior

This study emphasis is designed for students intending to specialize in the management of the human resources in a business enterprise. Studies are offered in management of personnel, influencing group and individual behavior, and structuring an organization to achieve goals.

In addition to the required courses in the CMC and (Option 1) Business Administration-General Management, the student is urged to select 15 credit hours from among

the courses listed below. The student has no further requirement for the Major in Management.

Mg 301 Theories and Cases in Administration
Mg 306 Principles of Personnel Management
Mg 400 Management and Organizational Behavior I
Mg 401 Management and Organizational Behavior II
Mg 430 Administrative Practices and Management I
Mg 431 Administrative Practices and Management II
Mg 573 Selected Topics in Business Administration
Mg 671 Internships in Business Administration

Option 1C: Concentration in Business Administration with Study Emphasis in Production and Operations Management

This study emphasis is designed for students intending to make extensive use of quantitative analysis techniques in Production and Operations Management or in other functional areas of Management.

Typically, the student opting for this study emphasis would have a Minor in Mathematics, Computer Science or Economics, preferably rank in the upper 10% of the class.

In addition to the required courses in the CMC and (Option 1) Business Administration – General Management, the student is urged to select 15 credit hours from among the courses listed below. The student has no further requirement for the Major in Management.

Mg 407 Production Management I
Mg 408 Production Management II
Mg 409 Quantitative Analysis and Techniques I: Linear Models for Administration
Mg 410 Quantitative Analysis and Techniques II: Stochastic Models for Administration
Mg 573 Selected Topics in Business Administration
Mg 671 Internships in Business Administration
Mg380 Probability

Suggested Electives for the Concentration (Options 1, 1A, 1B, 1C)

All upper levels electives highly recommended as supplementary to the CMC and not required in the course of study of the Option chosen.

OPTION II: Concentration in Public Administration

As a field of study and practice Public Administration is concerned with the effective management of resources to improve the quality of services provided to citizens. To achieve this goal, Public Administrators are involved with formulating, implementing and evaluating programs that have been approved by the legislative and executive branches.

Public Administrators are, above all else, problem-solvers; they are key participants in the process of devising strategies for improving the standard of livng in their communities.

This concentration provides the student with the expertise for administrative positions in the majority of governmental areas.

The recommended program is designed:

1) To prepare students for both line and staff positions in such areas as budget and finance, personnel, governmental planning, public information, program analysis, and general management.
2) To develop the competencies of public employees who are interested in position of greater scope and responsibility.

In addition to the required courses in the CMC*, the student must complete the required courses listed below and 12 credits in upper level management courses, preferably from the list of recommended electives for the concentration.

*Note that 9 credit hours in the CMC are not required for Option II students. Also note that an Option II student must take MG 361 Public Management in the CMC rather than MG 452 Health Systems.

Mg 360 Public Program Analysis
Mg 462 Employee Relations in the Public Sector
Mg 460 Law for Government Administrators
Mg 464 Government Budgeting Systems
Mg 665 Practicum in Public Management

Ur 210 Analysis of Urban Systems
Ur 311 Urban Politics
Ur 320 Human Needs and Social Services

Suggested Electives for the Concentration (Option II)

In addition to the recommended electives in the CMC, the following are suggested:

Mg 313 Cost Accounting
Mg 413 Federal Income Taxation
Mg 430 Administrative Pracitces and Management I
Mg 431 Administrative Practices and Management II
Mg 563 Selected Topics in Public Administration
Mg 661 Internships in Public Administration
Ec 401 Public Spending and Taxation
Ge 440 Introduction to Urban and Regional Planning
Ur 310 Power, Politics, and Decision Making in the Urban Community

OPTION III - CONCENTRATION IN HEALTH ADMINISTRATION

One of the most rapidly escalating career paths in Management is the field of Health Administration. A critical emphasis is cost control facilities planning and resource utilization in health care and services organizations is generating a demand for administrators able to operate efficiently and effectively using modern management techniques.

The Concentration in Health Administration is a program of professional studies in management as it relates to the administration of health care oriented agencies and organizations.

The program of studies selects management courses that expose the student to administrative techniques and practices particularly apropos to the demands of the health care field, and to a sequence of health technology and orientation courses that provide the background for the field of concentration.

In addition to the required courses in the CMC*, the student concentrating in Health Administration must complete the courses totalling 9 credits listed below:

So 210 Medical Sociology
Mg 553 Selected Topics in Health Administration
Mg 651 Internships in Health Administration

*The student on Option III must select Mg 450-Health Systems in the Common Management Core.

To complete studies for the Major in Management-Health Administration, the student must select 18 elective upper-level (300 and 400 level) credits from the following list:

Upper Level Management Electives for the Concentration (Option III).

In addition to the recommended electives in the CMC, the following are suggested.

Mg 313 Cost Accounting
Mg 320 Business Law
Mg 400 Management and Organizational Behavior I
Mg 401 Management and Organizational Behavior II
Mg 454 Medical Jurisprudence

Other Upper Level Electives

Ur 320 Human Needs and Social Services
He 415 Aging, Death and Suicide Education
Ps 420 Clinical Psychology

OPTION IV - ANY CONCENTRATION: ADVISED PROGRAM TO PREPARE FOR GRADUATE STUDY IN MANAGEMENT

The student who aspires to Graduate Study in Management should contact the Chairman of the Department of Management as soon as possible.

Generally, the student will be tested to determine his/her basic preparation level, interviewed to establish an area of possible concentration and counselled into a specialized study program commensurate with his/her skills level and interests.

The advised study program places special emphasis in developing skills to achieve the following:
Graduate Management Aptitude Test (GMAT) proficience
In-depth management skills for the graduate study emphasis desired.

RECOMMENDED PROGRAMS OF STUDY FOR THE MAJOR IN MANAGEMENT

The recommended programs of study are designed to maximize - within the limitations of course availability and general academic requirements - the student's competitiveness in the marketplace. They are, therefore, heavily oriented to direct management skills.

Required courses for the Major are in boldfaced type and include required prerequisites, required Common Management Core, required electives for the concentration. Other courses listed are highly suggested electives to fulfill General Distribution requirements, and prerequisites for higher level courses listed (e.g., where Mg 474 - Corporate Law is listed, its prerequisite Mg 320 - Business Law is also listed as suggested).

Students with special interests may deviate from the recommended programs. They are reminded, however, to check prerequisites and other requirements for courses substituted.

Students intending to pursue a Minor in another department should notify their Major advisor of their intentions as early as possible so that the correct adjustments may be made in the Program of Study.

OPTION 1 - CONCENTRATION IN BUSINESS ADMINISTRATION - GENERAL MANAGEMENT

FRESHMAN

Fall Semester

Ma 110 Algebra/Trigonometry
Ph 100 Logic, Knowledge and Philosophy: An Introduction
En 101 English Composition
Distribution Electives (Arts) - 3 credits
Physical Education requirement - 2 credits
Ec 100 Introduction to Macroeconomics

17 Credits

Spring Semester

Ma 302 Calculus for Management Majors
Mg 110 Introductory Accounting I
Cs 150 Introduction to Computer Science
En 304 Technical Writing
Ec 101 Introduction to Microeconomics
Physical Education requirement - 1 credit

17 Credits

SOPHOMORE

Fall Semester

Cs 210 Management Data Processing
Mg 111 Introductory Accounting II
Ma 250 Statistics
Me 470 Communication Theory
Federal and State Constitutions - 3 credits
Distribution Elective (Arts) - 1 credit

16 Credits

Spring Semester

Mg 200 Fundamentals of Management and Org. Behavior
Mg 310 Managerial Accounting and Budgeting
Ur 101 Introduction to Urban Systems
Mg 320 Business Law
Ma 251 Statistics II
Distribution Elective (Arts) - 1 credit

16 Credits

JUNIOR

Fall Semester

Mg 300 Problem Solving in Organizations
Mg 305 Organizational Dynamics
Mg 405 Marketing I
Mg 313 Cost Accounting
Ma 325 Introduction to Quantitative Methods
Distribution Elective (Arts) - 1 credit

16 Credits

Spring Semester

Mg 361 Public Management

Mg 403 Financial Management I
Mg 315 Quantitative Analysis and Information Systems
Mg 406 Marketing II
Mg 306 Principles of Personal Management

16 Credits

SENIOR

Fall Semester

Ec 203 Industrial Organization
Mg 490 Administrative Strategy: Formation and Implementation
Mg 408 Production Management I
Mg 430 Administrative Practices and Management I
Mg 573 Selected Topics in Business Administration - 3 credits

15 credits

Spring Semester

Mg 408 Production Management II
Mg 474 Corporate Law
Mg 431 Administrative Practices and Management II
Mg 671 Internship in Business Administration - 7 credits

16 credits

Total Credits - 128

OPTION 1A CONCENTRATION IN BUSINESS ADMINISTRATION:ACCOUNTING/ FINANCE SPECIALIZATION

FRESHMAN

Fall Semester

Identical to Option I

Spring Semester

Identical to Option I

SOPHOMORE

Fall Semester

Identical to Option I

Spring Semester

Identical to Option I

JUNIOR

Fall Semester

Mg 300 Problem Solving in Organizations
Mg 305 Organizational Dynamics
Mg 405 Marketing I
Mg 313 Cost Accounting
Mg 325 Introduction to Quantitative Methods
Distribution Elective (Arts) - 1 credit

16 Credits

Spring Semester

Mg 361 Public Management
Mg 403 Financial Management I
Mg 315 Quantitative Analysis and Information Systems
Mg 474 Corporate Law
Mg 406 Marketing II

15 Credits

SENIOR

Fall Semester

Ec 203 Industrial Organization
Mg 490 Administrative Strategy: Formulation and Implementation
Mg 404 Financial Management II
Mg 415 Securities Analysis I
Mg 407 Production Management I

15 Credits

Spring Semester

Mg 413 Federal Income Taxation
Mg 314 Auditing
Mg 416 Securities Analysis II
Mg 408 Production Management II
Mg 671 Internship in Business Administration - 4 credits

16 Credits

Total Credits - 128

OPTION 1B - CONCENTRATION IN BUSINESS ADMINISTRATION: STUDY EMPHASIS IN ORGANIZATIONAL BEHAVIOR

FRESHMAN

Fall Semester

Identical to Option I

Spring Semester

Identical to Option I

SOPHOMORE

Fall Semester

Identical to Option I

Spring Semester

Identical to Option I

JUNIOR

Fall Semester

Mg 300 Problem Solving in Organizations
Mg 305 Organizational Dynamics
Mg 405 Marketing I
Mg 313 Cost Accounting
Ma 325 Introduction to Quantitative Method
Distribution Elective (Arts) - 1 credit

16 Credits

Spring Semester

Mg 361 Public Management
Mg 403 Financial Management I
Mg 315 Quantitative Analysis and Information Systems
Mg 306 Principles of Personnel Management
Mg 301 Theories and Cases in Administration

15 Credits

SENIOR

Fall Semester

Ec 203 Industrial Organization
Mg 490 Administrative Strategy: Formulation and Implementation
Mg 400 Management and Organizational Behavior I
Mg 430 Administrative Practices and Management I
Mg 408 Production Management I

15 Credits

Spring Semester

Mg 401 Management and Organizational Behavior I
Mg 431 Administrative Practices and Management II
Mg 409 Production Management II
Mg 671 Internship in Business Administration - 7 credits

16 Credits

Total Credits - 128

OPTION 1C - CONCENTRATION IN BUSINESS ADMINISTRATION - STUDY EMPHASIS IN PRODUCTION/OPERATIONS MANAGEMENT

FRESHMAN

Fall Semester

Identical to Option 1

Spring Semester

Identical to Option 1

SOPHOMORE

Fall Semester

Cs 210 Management Data Processing
Mg 111 Introductory Accounting II
Mg 250 Statistics I
Ma 301 Calculus II
Federal & State Constitution - 3 credits
Distribution Elective (Arts) - 1 credit

16 Credits

Spring Semester

Mg 200 Fundamentals of Management an and Org. Behavior
Mg 310 Managerial Accounting and Budgeting
Ur 101 Introduction to Urban Systems
Mg 380 Probability Theory
Ma 351 Statistics II
Distribution Elective (Arts) - 1 credit

16 credits

JUNIOR

Fall Semester

Mg 300 Problem Solving in Organization
Mg 305 Organizational Dynamics
Mg 405 Marketing I
Mg 325 Introduction to Quantitative Analysis
Mg 313 Cost Accounting
Distribution Elective (Art) - 1 credit

16 credits

Spring Semester

Mg 361 Public Management
Mg 403 Financial Management I
Mg 315 Quantitative Analysis and Information System
Mg 406 Marketing II
Mg 306 Principles of Personnel Management

15 credits

SENIOR

Ec 203 Industrial Organization
Mg 490 Administrative Strategy: Formulation and Implementation
Mg 407 Production Management I
Mg 409 Quantitative Analysis and Techniques I Linear Models for Administration
Mg 404 Financial Management II

15 credits

Spring Semester

Mg 403 Production Management
Mg 410 Quantitative Analysis Techniques II-Stochastic Models for Administration
Mg 320 Business Law
Mg 671 Internship in Business Administration - 4 credits
Mg 573 Selected Topics in Business Administration Operations Research

16 credits

Total credits - 128

OPTION II CONCENTRATION IN PUBLIC ADMINISTRATION

FRESHMAN

Fall Semester

Identical to Option I

Spring Semester

Identical to Option I

SOPHOMORE

Fall Semester

Cs 210 Management Data Processing
Ma 250 Statistics I
Mg 111 Introductory Accounting II
Ec 201 Microeconomics
Federal and State Constitution - 3 credits
Distribution Elective (Arts) - 1 credit

16 credits

Spring Semester

Mg 200 Fundamentals of Management and Org. Behavior
Ur 101 Introduction to Urban Systems
Mg 360 Public Program Analysis
Mg 310 Managerial Accounting and Budgeting
Ma 251 Statistics II
Distribution Elective (Arts) - 1 credit

16 credits

JUNIOR

Fall Semester

Mg 361 Public Management
Ur 210 Analysis of Urban Systems
Mg 305 Organizational Dynamics
Ma 325 Introduction to Quantitative Analysis
Hi 244 American Urban History
Distribution Elective (Arts) - 1 credit

16 credits

Spring Semester

Mg 462 Employee Relations in the Public Sector
Ur 311 Urban Politics
Mg 315 Quantitative Analysis and Information Systems
Ec 206 Urban Economics
Ge 430 Urban Geography

15 credits

SENIOR

Fall Semester

Mg 464 Government Budgeting Systems
Ur 320 Human Needs and Social Services
Mg 490 Administrative Strategy: Formulation and Implementation
Ge 440 Introduction to Urban and Regional Planning
Mg 400 Management and Organizational Behavior I

15 credits

Spring Semester

Mg 460 Law for Government Administrators
Mg 665 Practicum in Public Administration - 7 credits
Ec 401 Public Spending and Taxation
Mg 401 Management and Organizational Behavior II

16 credits

Total credits - 128

OPTION III - CONCENTRATION IN HEALTH ADMINISTRATION

FRESHMAN

Fall Semester

Identical to Option I

Spring Semester

Identical to Option I

SOPHOMORE

Fall Semester

Cs 210 Management Date Processing
Mg 111 Introductory Accounting II
Ma 250 Statistics I
He 100 Personnel Health
Federal and State Constitution - 3 credits
Distribution Elective (Arts) - 1 credit

16 credits

Spring Semester

Mg 200 Fundamentals of Management and Org. Behavior
Mg 310 Managerial Accounting and Budgeting
So 210 Medical Sociology
Ma 251 Statistics II
Distribution Elective (Arts) - 1 credit

16 credits

JUNIOR

Fall Semester

Mg 450 Health Systems in America
Mg 305 Organizational Dynamics
Mg 405 Marketing I
Mg 313 Cost Accounting
Ma 325 Introduction to Quantitative Methods
Distribution Elecive (Arts) - 1 credit

16 credits

Spring Semester

Mg 403 Financial Management I
Mg 315 Quantitative Analysis and Information System
Mg 406 Marketing II
Mg 306 Principles of Personnel Management
Mg 320 Business Law

15 credits

SENIOR

Fall Semester

Mg 490 Administrative Strategy: Formulation and Implementation
Mg 553 Selected Topics in Health Administration
Mg 407 Production Management I
Mg 400 Management and Organizational Behavior I
Ur 320 Human Needs and Social Services

15 credits

Spring Semester

Mg 651 Internship in Health Administration - 4 credits
Mg 408 Production Management II
Mg 474 Corporate Law
Mg 401 Management and Organizational Behavior II
Nu 410 Community Health Nursing

16 credits

Total credits - 128

OPTION V THE MINOR IN MANAGEMENT

To qualify for a minor in Management, the student has to successfully complete the following:

15 prerequisite credits

Cs 150 Introduction to Computer Science
Cs 210 Management Data Processing
Ma 110 Algebra/Trigonometry
Ma 250 Statistics I
Ma 302 Calculus for Management Majors

21 required credits:

Mg 110 Introduction to Accounting I
Mg 111 Introduction to Accounting II
Mg 200 Fundamentals of Management and Organization Behavior
Mg 300 Problem Solving in Organizations
Mg 305 Organizational Dynamics
Mg 310 Managerial Accounting and Budgeting
Mg 315 Quantitative Analysis and Information Systems

A 400 Level Management Elective (3 credits)

TOTAL = 39 CREDITS

COURSE DESCRIPTIONS

Mg 100 The Administrator.
Cat. 3.3hrs.
Prerequisite: none.
A one semester course introducing students to administration. This course includes lectures, discussions, and the presence of administrators in the fields of business, health and government. Why the administator is required, what he does, and how he does it is the focus of the course. The principal purpose of this one semester course is to act as a liberal arts survey of administration for all students, and to outline the reasons for, and subject material in, the field of administrative studies for potential majors and minors.

Mg 110 Introductory Accounting I.
Cat. I. 3 hrs.
Mg 111 Introductory Accounting II.
Cat. I. 3 hrs.
Prerequisite: Mg 110.
This two semester course teaches the basic structure and the fundamental concepts and principles of accounting. This includes the nature and classification of accounts, the development of accounting records including special purpose journals, controlling accounts and subsidiary ledgers, and other systems and controls. The establishment of the accounting cycle and the preparation of financial statements is also covered. Consideration of such areas as sales purchase, cash receivables, payables, inventories, deferrals, accruals, and plant assets are included.

Mg 200 Fundamentals of Management and Organizational Behavior.
Cat. I. 3 hrs.
Prerequisite: none.
The study of managerial practices and behavior in organizational settings, with emphasis on the administrative functions of planning, organizing, staffing, directing and controlling. Coverage of motivation, communication, decision-making, and other significant managerial concepts. The student will be exposed to the case study method in preparation for later in depth application through individual, group, and class efforts.

Mg 300 Problem-Solving in Organizations.
Cat. I. 3 hrs.
Prerequisite: Mg 200.
This course will emphasize the most characteristic tasks of managers. Decision-making and problem-solving. Issues, cases, incidents, and readings will be used to refine the student's abailities to apply the concepts through individual and group efforts, and allow each student to form his/her own philosophy of management. Speakers from various sectors of the community will be used to provide broad and varied perspective.

Mg 301 Theories & Cases in Administration.
Cat. 3. 3 hrs.
Prerequisite: Ad 300.
An intensive advanced study of the functions and processes of administration. The focus of attention is to relate the structure of organized work effort with the process and administration of this effort. Cases and discussion techniques are used to a great extent.

Mg 305 Organizational Dynamics.
Cat. I. 3 hrs.
Prerequisite: Mg 200.
Centers on behavior principles and methods which underlie the prevention and solution of problems in both individual and group contexts. Includes understanding attitudes, frustration, motivation, conference leadership, participation, and patterns of human behavior. Lab stimulations are used extensively to highlight concepts, and to develop inter personal skills for the effective utilization of human resources.

Mg 306 Principles of Personnel Management.
Cat. 3. 3 hrs.
Prerequisite: Mg 305.
Philosophy, objectives, policies, and practices of personnel management constitute the basic subject matter of this course. The role of personnel administration in organizations is explored via a functional approach. This course includes: personnel slection, training and development, compensation systems, health and safety, benefits and services, handling of grievances, and the role of supervision.

Mg 310 Managerial Accounting and Budgeting.
Cat. I. 3 hrs.
Prerequisites: Mg 110, Mg 111.
Interpretation and use of accounting, reports and analysis for managerial purposes of planning, coordination, and control; cost-profit-volume relations, budgeting, accounting for overhead and manufacturing concerns.

Mg 312 Intermediate Accounting.
Cat. I. 3 hrs.
Prerequisite: Mg 110-111
Theories underlying financial accounting practice: special problems associated with preparation of the income statement and balance sheet; accounting principles underlying the valuation of cash, receivables, inventories, long-term investments, fixed assets, liabilities and owners' equity accounts; special purpose statements; relevant APB opinions and FASB statements.

Mg 313 Cost Accounting.
Cat. I. 3 hrs.
Prerequisites: Mg 111, Mg 310.
A one semester course at the intermediate accounting level. Emphasis is on analysis of labor, materials and overhead costs for a manufacturing operation. Job order costing and process costing are examined in detail. Cost-volume-profit relationships are analyzed with the focus on the use of cost information for managerial decision making.

Mg 315 Quantitative Analysis and Information Systems.
Cat. I. 3 hrs.
Prerequisites: Cs 210 and Ma 302.
An introductory course on the basic quantitative analysis techniques applied to business planning, operations and control systems. The techniques are presented within the framework of business information systems.

Mg 320 Business Law.
Cat. 3. 3 hrs.
Prerequisite: Mg 200.
A course designated to acquaint the student with the sources of law, its history and development and its classifications through the study of the fundamental rules and principles of law in the area of Contracts, Agency, Negotiable Instruments, Property Sales and other appropriate subjects.

Mg 360 Public Program Analysis .
Cat. I. 3 hrs.
Prerequisite: Mg 200.
A survey of practices commonly used by public administrators to implement and evaluate government policies and programs. Attention is given to determining why many government programs have failed to meet their goals, and devising alternative approaches for improving the delivery of services. Topics include the measurement of bureaucratic performance, and the impact of Federal standards on state and local administration.

Mg 361 Public Management.
Cat. I. 3 hrs.
Prerequisites: Mg 360 or department consent.
A systematic examination of widely used management concepts and techniques as applied to public agencies. Topics include administrative planning and organizational design, headquarters-field and staff-line relations, management information systems, decision-making strategies, communication networks, and approaches to centralization and decentralization. Role-playing and intensive case analysis is used to show similarities and differences with business models.

Mg 400 Management and Organization Behavior I.
Cat. 3. 3 hrs.
Prerequisites: Mg 300 and Mg 305.
Study of concepts, theory, research and operational problems of organizations. Analysis of organizational behavior and organized work processes. Examines provisions of necessary factors and relationships to achieve organizational objectives and development, and accomplish the management of work. Considerable attention is given to the recent contributions of the behavioral sciences to the management of organizations.

Mg 401 Management and Organizational Behavior II.
Cat. 2. 3 hrs.
Prerequisites: permission of Instructor and Mg 400.
Advanced study and analysis of organizational behavior and organized work processes. Focus on work group models, intergroup models, and total behavior in organized work effort. The posture of the behavioral sciences/systems approach is taken.

Mg 403 Financial Management I.
Cat. I. 3 hrs.
Prerequisites: Mg 310, Mg 305.
This course is designed to introduce the student to the problems of the finance function and to the responsibilities of the chief financial executive and his staff in the ongoing operations of the firm. Emphasis will be on efficient allocation and uses of funds. Includes such topics as forms of business, organization, financial statements, analysis for solvency and profitability, cash budgeting, working capital management, short term financing, and the meaning and use of financial leverage.

Mg 404 Financial Management II.
Cat. 3. 3 hrs.
Prerequisite: Mg 403.
This course, a continuation of Mg 403, is designed to deal with more complex problems faced by financial executives in evaluating investment opportunities and determining the least costly sources of funds. Topics studies include: estimation and discounting of cash flow, capital budgeting, decisions under risk and uncertainty, qualitative and quantitative appraisal of alternative sources of funds, capital structure and cost-of-Capital Theory, lease-buy decisions, and mergers and acquisitions. The course draws heavily on case materials.

Mg 405 Marketing.
Cat. I. 3 hrs.
Prerequisites: Mg 200, Ma 250.
The course will present an overview of the full range of activities involved in marketing. Attention will be given to the appraisal and diagnosis, organization and planning, and control of all elements of marketing. Both consumer and industrial markets and enterprises involved in producing and distributing goods and services will be investigated. The objective of the course is to develop an understanding of marketing principles, problems, and processes.

Mg 406 Marketing II.
Cat. I. 3 hrs.
Prerequisite: Mg 405.
The course will examine the application of principles, practices, and decision making processes involved in the various elements of a marketing program. Included will be product planning, market characteristics, channels of distribution, physical distribution, quantitative analysis of marketing data, organization, and pricing. Cases will be studied in order that the student may be able to integrate all marketing functions for the analysis of both profit and non-profit institutions.

Mg 407 Fundamentals of Production Management I.
Cat. 3. 3 hrs.
Prerequisites: Mg 300, Mg 310, Mg 315.
This is intended to be the first of a series of two courses for senior Management majors. This first course applies the principles of organization and administration to the function of production. Fundamental principles governing the effective translation of production requirement into facilities, procedures, and operating organizations produce the required goods and services. Includes: the determination of effective methods and selection of manufacturing and materials, handling, equipment, plant layouts, building and location.

Mg 408 Fundamentals of Production Management II.
Cat. 3. 3 hrs.
Prerequisite: Mg 407.
This is intended to be the second of a set of two courses for senior Management majors. This second course is a continuation of Mg 407 with major focus devoted to production planning and material, preventive maintenance, manpower and staff requirements are considered. Principles for maintaining the effective flow of production and auxilliary services in coordination with other units in the organization. Includes: scheduling, dispatching and follow-up procedures.

Mg 409 Quantitative Analysis and Techniques I. Linear Models for Administration.
Cat. 3. 3 hrs.
Prerequisites: Ma 302, Mg 315.
Application of quantitative techniques to solution of operational problems in administration; general elements of linear programming, inventory models, network analysis, and PERT-CPM.

Mg 410 Quantitative Analysis and Techniques II: Stochastic Models for Administration.
Cat. 3. 3 hrs.
Prerequisite: Mg 409.
Application of stochastic models and techniques for solution of operational problems in administration. Includes quality control, waiting line models, replacement models, and game theory.

Mg 415 Securities Analysis I.
Cat. 3. 3 hrs.
Prerequisites: Mg 305, Mg 310, Mg 403.
Course investigates the major securities exchange institutions and explores the cognative measures used to evaluate investment opportunities. Special attention is given to types of securities issued and their uses in the fields of industrial, transportation, insurance, banking and real estate.

Mg 416 Securities Analysis II.
Cat. 3. 3 hrs.
Prerequisites: Mg 310, Mg 403.
Course provides an examination of securities and a discussion of methods used to evaluate their place in the investment portfolios of industry, government, personal, and financial intermediaries.

Mg 430 Administrative Practices and Management I.
Cat. 3. 3 hrs.
Prerequisites: Mg 300, Mg 305, Mg 315.
This is intended to be the first of a set of two courses for senior Management majors. The first course commences with an overall exposure, and an analysis of several fields of human conduct in work organization settings. Includes: optimum use of human resources through job enrichment, motivation, and management systems based on behavioral research findings.

Mg 431 Administrative Practices and Management II.
Cat. 3. 3 hrs.
Prerequisite: Mg 430.
This is intended to be the second of a set of two courses for the senior Management major. This course commences with a brief overview of the field of human conduct in work organizations and on coping with organization change and interdepartment conflict; models and application of managerial systems for effective individual and organizational goal setting and achievement.

Mg 450 Health Systems in America.
Cat. 3. 2-3 hrs.
Prerequisites: Mg 300, Mg 305 or consent of Instructor.
A one semester course focusing on the administration of institutions in the health area. The course covers the basic concepts in health and medical care system management, the provision of health and medical care, the government's role in the provision of health and medical care, and finally problems, topics and issues in American health and medical care system. Students will be expected to demonstrate not only comprehension in these areas but also the ability to analyze major components (and relationships between components) providing health care, the ability to apply knowledge in a research report, and finally comprehension of the real world perspectives which health and medical leaders bring to the accomplishment of these policies and goals.

Mg 454 Medical Jurisprudence.
Cat. 3. 3 hrs.
Prerequisites: Mg 450.
A course dealing with Text and Source materials on Medical-legal problems. Orientation of Medical case management, together with medical proof in litigation.

A further concentration on the Liability of Hospitals and Nursing Homes and duties owed by the Administrators and Nurses.

Mg 460 Law for Government Administrators:
Cat. 1.3 hrs.
Prerequisite: Mg 361.
The American Legal System viewed as both a source of power and restraint on public officials and administrators. Emphasizes obligations and responsibilities in conducting the affairs of county and local governments in the Commonwealth. Attention is given to ordinances, rule-making powers, due process, and other administrative procedures as applied to such areas as appropriating funds, licensing, planning and zoning, assessments, public safety, and education.

Mg 462 Employee Relations in the Public Sector:
Cat. 1. 3 hrs.
Prerequisite: Mg 361.
A survey of practices and recent trends in the area of public personnel administration, including such topics as manpower planning, recruitment, classification and compensation. Particular emphasis on the growing impact of public service unions on the civil service system. Both the scope and procedures of collective bargaining will be covered in detail, particularly recent agreements negotiated in the Commonwealth. Key issues such as deprived group hiring, testing practices and productivity will be analyzed.

Mg 464 Government Budgeting Systems:
Cat. I. 3 hrs.
Prerequisites: Mg 111, Mg 361.
The budget considered as an instrument for program planning and administrative control. Steps in the budget cycle including preparation presentation, legislative action, execution and audit will be covered by a "hands-on" approach drawing on materials and documents used by Commonwealth agencies and local governments. Advantages and disadvantages of various kinds of budgets usch as line-item, performance, cost benefit and PPBS will be examined in a workshop format. Attention is also given to revenue source and problems of fiscal management.

Mg 474 Corporate Law.
Cat. 3. 3 hrs.
Prerequisite: Mg 320.
A course designed especially for future Corporate executives and accountants. The areas of concentration will be in the Corporate Powers and Corporate Management.

Mg 490 Administrative Strategy Formulation and Implementation.
Cat. 3. 3 hrs.
Prerequisites: Mg 403, Mg 405 or permission of instructor.
To develop skills in analysis of the general management problems of development and implementation of strategy, and in presenting and defending well-reasoned oral diagnosis of, and recommended solutions for, these problems. This skill includes an ability to apply techniques, concepts, and theories learned in other areas to the analysis and solution of problems. As such, this is a capstone course drawing on information previously provided to the student in finance, accounting, marketing, general management, economics, and the behavioral sciences.

Mg 552 Independent Study in Health Administration.
Cat. 3. 1-6 hrs.
Prerequisites: Mg 300, Mg 450 or consent of Instructor.
Independent study in health usually involving field work which is not an internship.

Mg 553 Selected Topics in Health Administration.
Cat. 3. 1-6 hrs.
Prerequisites: Mg 361 and consent of Instructor.
Selected topics in health administration of mutual interest to the student and faculty.

Mg 563 Selected Topics in Government Administration.
Cat. 3. 1-6 hrs.
Prerequisites: Mg 361 and consent of Instructor.
Selected topics in government of mutual interest to the student and faculty.

Mg 572 Independent Study in Business Administration.
Cat. 3. 1-6 hrs.
Prerequisites: Mg 300, Mg 305, Mg 310 and consent of Instructor.
Independent study in business, usually involving field work, which is not an internship.

Mg 573 Selected Topics in Business Administration.
Cat. 3. 1-6 hrs.
Prerequisites: Mg 305, Mg 403, Mg 405 or consent of Instructor.
Selected topics in business of mututal interest to the student and faculty.

Mg 651 Internships In Administration.
Cat. 3. 1-12 hrs.
Prerequisites: Mg 300, Mg 450 and consent of department.
The Management Program provides majors the opportunity to gain practical experience in the operations of health administration. Qualified students can spend a variety of part-time or full-time internships with cooperating health facilities for varying lengths of time. The student participates in various managerial activities under the supervision of experience executive and managerial personnel. Students must participate in the Internship Seminar and submit a written report upon completion of the program. An evaluation of the student's effort will be secured from the officials of the organization in which he interned.

Mg 665 Practicum in Public Management. (Consulting Process).
Cat. I. 1-9 hrs.
Prerequisites: Mg 361 and permission of Instructor. Coordinated and supervised field work on a major project which is designed to solve an agency problem or improve its performance. Principal objective is to integrate a student's knowledge of public administration with an ongoing case situation. Includes periodic seminars. Wherever feasible students are involved in implementing their written recommendations. While projects will vary with the circumstances, examples include, design and writing of personal manual, conducting an employee attitude survey, compiling data on citizen preferences toward local services establishing a community relations unit in the police department and preparing a reorganization proposal for a public works department.

Mg 671 Internships in Business Administration.
Cat. 3. 1-12 hrs.
Prerequisites: Mg 305, Mg 403, Mg 405 and department consent.
The Management Program provides majors the opportunity to gain practical experience in the operations of business. Qualified students can spend a variety of part-time or full-time internships with cooperating business firms for varying lengths of time. The student participates in various managerial activities under the supervision of experience executive and managerial personnel. Students must participate in the Internship Seminar and submit a written report upon completion of the program. An evaluation of the student's effort will be secured from occicials of the organization in which he interned.

Mg 661 Internships in Public Administration.
Cat. 3. 1-12 hrs.
Prerequisites: Mg 361 and consent of Instructor. The Management Program provides majors the opportunity to gain practical experiences in the operations of government. Qualified students can spend a variety of part-time or full-time internships with cooperating governmental agencies for varying lengths of time. The student participates in various managerial activities under the supervision of experienced executive and managerial personnel. Students must participate in completion of the program. An evaluation of the student's efforts will be secured from officials of the organization in which he interned.

Mathematics

Professor: Schoen

Assistant Professor:
Hayes, Hill, Kotzen

Associate Professor:
Campo. Perry, Redding

The baccalaureate degree candidate in mathematics can train for various programs. He may prepare himself for a teaching career, for advanced study, for research work, for actuarial science, for engineering, and for business and industry.

Thirty-three Semester hours of credit are required by the department to meet the minimum standard for a major in Business and Finance or those students having a minor in Secondary Education are not required to take Calculus III and IV. All courses in the Catalog are acceptable for the Major except MA 100 - Basic Mathematics, Ma 115 College Algebra and Trigonometry (mgt. only), Ma 130 - Modern Mathematics for Elementary Majors, Ma 131 - Modern Geometry for Elementary Majors. There are 36 courses or 108 semester hours from which the major may choose.

Eighteen semester hours of credit are required by the college to meet the minimum standard for a minor in mathematics. The course offerings in Calculus I and II, and Modern Mathematics are required for mathematics minors. All courses listed in the catalog are acceptable for the minor except Ma 100 - Basic Mathematics. Those students in elementary education who have a concentration in mathematics should consult the Elementary Education Department for further information.

The student who plans to continue to a more advanced career in the field is urged to take Abstract Algebra, Linear Algebra, Number Theory, as well as Advanced Calculus. Those who plan to teach at the secondary school level are urged to take Modern Geometry, Linear Algebra, History of Mathematics, Introduction to Statistics, and Problem Solving. Probability, Statistics, Numerical Methods and Numerical Analysis should be useful for those interested in actuarial work. Those interested in the engineering program should take Differential Equations in addition to the required calculus sequence.

The incoming Freshmen will be assigned to the Department Chairman, who, in turn, will make an even distribution among the members of the department. Students entering the actuarial program will be assigned to Dr. Kenneth Schoen. All transfer students will be assigned to Mr. John Hayes. Students entering the engineering program will be assigned to the Department Chairman. The Advisor will help the student to plan his course so that he will fulfill not only his math requirements but also the degree requirements.

The Mathematics Department recommends that students elect Ma 160 Survey of Math I or Ma 161 Survey of Math II to satisfy the distribution requirements.

Students should have had trigonometry as part of their high school background or have taken Ma 120 College Trigonometry before taking Ma 300 Calculus I.

In addition to the basic program in mathematics the Department of Mathematics also offers three other options: Actuarial Program, and Professional Preparation for Engineering Fields and Architecture and Mathematics for Business and Finance.

The following degree programs are offered by the Mathematics Department. The courses listed under these programs are required.

Liberal Arts

Ma 300	Calculus I	4 credits
Ma 301	Calculus II	4 credits
Ma 220	Modern Mathematics	3 credits
Ma 310	Calculus III	3 credits
Ma 311	Calculus IV	3 credits
	Electives	7 credits

Secondary Education Minors

Ma 300	Calculus I	4 credits
Ma 301	Calculus II	4 credits
Ma 220	Modern Mathematics	3 credits
Ma 110	College Algebra	3 credits
Ma 120	College Trigonometry	3 credits
Ma 170	Analytic Geometry	3 credits
Ma 140	Problem Solving	1 credit
	Electives	3 credits

In addition to these required courses students in the above programs must take 9 credits from the following list:

Ma 305 Abstract Algebra
Ma 320 Ordinary Differential Equations
Ma 325 Introduction to Quantitative Methods
Ma 330 Linear Algebra
Ma 340 Modern Geometry I
Ma 341 Modern Geometry II
Ma 350 History of Mathematics
Ma 360 Number Theory
Ma 370 Introduction to Actuarial Science
Ma 375 Life Contingency
Ma 310 Calculus III
Ma 311 Calculus IV
Ma 380 Probability
Ma 381 Math. Staistics
Ma 401 Ring Theory
Ma 410 Advanced Calculus I
Ma 411 Advanced Calculus II
Ma 415 An Introduction to Partial Differential Equations
Ma 430 Topology
Ma 440 Introduction to Numerical Analysis
Ma 441 Numerical Methods
Ma 450 Complex Variables

Business and Finance

Ma 300	Calculus I	4 credits
Ma 301	Calculus II	4 credits
Ma 225	Business Mathematics	3 credits
Ma 250	Introduction to Statistics I	3 credits
Ma 251	Introduction to Statistics II	3 credits
Ma 325	Introduction to Quantitative Methods	3 credits
Ma 440	Introduction to Numerical Analysis	3 credits
Ma 140	Problem Solving	1 credit
Ma 220	Modern Math I	3 credits
Ma 330	Linear algebra	3 credits
Ma 370	Introduction to Actuarial Science	3 credits

Actuarial Programs

Ma 300	Calculus I	4 credits
Ma 301	Calculus II	4 credits
Ma 310	Calculus III	3 credits
Ma 311	Calculus IV	3 credits
Ma 220	Modern Mathematics	3 credits
Ma 370	Introduction to Actuarial Science	3 credits
Ma 375	Life Contingency	3 credits
Ma 440	Numerical Analysis	3 credits
Ma 380	Probability	3 credits
Ma 381	Statistics	3 credits
	Electives	1 credit

Professional Preparation for Engineering and Architecture

Ma 300 Calculus I
Ma 301 Calculus II
Ma 310 Calculus III
Ma 311 Calculus IV
Ma 320 Ordinary Differential Equations
Ma 334 Statics
Ma 336 Dynamics
Ma 338 Surveying

N.B. These requirements to be effective for all students in the class of 1979.

RECOMMENDED PROGRAM FOR MATHEMATICS MAJORS (B.A./B.S.)

FRESHMAN

Fall Semester

Calculus I
College Trigonometry
Modern Math I
Computer Fundamentals for Computation

Spring Semester

Calculus II
Modern Math II
Fortran IV

SOPHOMORES

Fall Semester

Calculus III
Abstract Algebra
Introduction to Statistics

Spring Semester

Calculus IV
History of Math
Ring Theory
Linear Algebra
Number Theory

JUNIORS

Fall Semester

Advanced Calculus I
Modern Geometry I
Probability
Introduction to Actuarial Science
Numerical Analysis

Spring Semester

Advanced Calculus II
Modern Geometry II
Statistics
Differential Equations
Numerical Methods

SENIORS

Fall Semester

Independent Study

Spring Semester

Complex Variables
Topology
Partial Differential Equations

All Math electives should be selected with the advice and consent of the studnet's Faculty Advisor.

RECOMMENDED PROGRAM FOR MATHEMATICS MAJORS(WITH A MINOR IN SECONDARY ED.)

FRESHMAN

Fall Semester

College Algebra
College Trigonometry
Modern Mathematics I
Suggested Electives

Spring Semester

Analytical Geometry
Problem Solving
Modern Mathematics II
Suggested Electives

SOPHOMORE

Fall Semester

Calculus I
Introduction to Statistics I
History of Mathematics
Suggested Electives

Spring Semester

Calculus II
Introduction to Statistics II
Suggested Electives

JUNIOR

Fall Semester

Modern Geometry I
Calculus III
Suggested Electives

Spring Semester

Calculus IV
Modern Geometry II
Suggested Electives

SENIOR

Fall Semester

Practice Teaching

Spring Semester

Electives to complete the 33 hours

ACTUARIAL PROGRAM

The actuarial program is designed to prepare a student to pass the first two or three Associateship Examinations before graduation. In addition, anyone who enters this program would also satisfy the requirements for a mathematics major at WSC.

After graduation from WSC, these participants could apply to colleges that offer a M.S. Degree in Actuarial Science or could seek immediate employment in insurance companies. The independent study courses in the Senior year should be a preparation for the necessary examinations in the society of actuaries.

Recommended Program of Studies

FRESHMAN

Fall Semester

Modern Math I
English Composition
Calculus I
Comp. Fund. for Computer

Spring Semester

Modern Math II
Calculus II
Fortran IV

SOPHOMORE

Fall Semester

Calculus III
*Intro. to Act. Science

Spring Semester

Calculus IV
Ord. Dif. Equation

JUNIOR

Fall Semester

*Intro. to Num. Analysis
Linear Algebra
*Required for Actuarial Program

Spring Semester

Numerical Methods
Partial Dif. Equation

SENIOR

Fall Semester

*Probability
Independent Study

Spring Semester

*Statistics
Independent Study

PROFESSIONAL PREPARATION FOR ENGINEERING FIELDS AND ARCHITECTURE*

The Engineering Program is designed to offer a general foundation for engineering so that the student will be prepared for various areas of specialization upon his transfer to an upper-division engineering curriculum. A student in this program would also have the option of developing a strong background in the major fields. In particular, he could choose to complete the requirements for a mathematics major.

Recommended Program of Studies

FRESHMAN

Fall Semester

English Composition
Social Science Elective
Calculus I
Physics I
Intro. to Computer Science
Physical Education

Spring Semester

Calculus II
Physics II
Fortran IV
Electives
Physical Education

SOPHOMORE

Fall Semester

Calculus III
General Chemistry I
Statics
Electives
Physical Education

Spring Semester

Calculus IV
General Chemistry II
Ordinary Diff. Equations
Dynamics
Elective
Physical Education

Students in this program are strongly encouraged to indicate their second field of study. The student who selects this optional program in the Department of Mathematics will have the opportunity during his Freshman year to combine this program with any of the following major fields of study: Mathematics; Administrative Studies; Chemistry; Biology; Geography.

MATHEMATICS FOR BUSINESS AND FINANCE

The Mathematics for Business and Finance is designed to offer students interested in a business career a combination of courses in mathematics as well as courses in computer science, economics and administrative studies which will be useful and meaningful.

Recommended Program of Studies

FRESHMAN

Fall Semester

Ma 225 Business Math
Cs 150 Introduction to Computer Science
Ma 300 Calculus I
Cs 160 Fortran

Spring Semester

*Mg 110 Accounting I
*Ma 140 Problem Solving
*Ma 250 Introduction to Statistics
*Ma 301 Calculus II

SOPHOMORE

Fall Semester

Cs 170 Cobol
Ma 251 Introduction to Statistics II
*Mg 200 Fundamentals of Management and Organizational Behavior
Ma 310 Calculus III
Ma 311 Calculus IV

Spring Semester

Ma 220 Modern Math I
*Ec 100 Economics I
Mg 111 Accounting II
Ec 101 Economics II
Cs 210 Management Data Processing

JUNIOR

Fall Semester

*Ma 370 Introduction to Actuarial Science
*Mg 310 Managerial Accounting and Budgeting
Mg 325 Planning, Forecasting and Control

Spring Semester

Ma 330 Linear Algebra
Mg 315 Quantitative Analysis and Information Systems
*Ma 320 Ordinary Differential Equations

SENIOR

Fall Semester

Ma 440 Numerical Analysis
Ec 102 Consumer Economics

Spring Semester

Ma 325 Introduction to Quantitative Methods
Ec 203 Industrial Organization

* Required for Business and Finance Program

COURSE DESCRIPTIONS

Ma 100 Basic Mathematics.
Cat. 3. 3 hrs.
Prerequisites: none.
This course provides the student who has little or no background in mathematics with the necessary arithmetic and algebra for the understanding of today's mathematics.

Ma 110 College Algebra.
Cat. 1. 3 hrs.
Prerequisites: none.
Properties of the real number system based upon set-theoretical foundations; linear, quadratic, and simultaneous equations, inequalities, absolute value, complex numbers, determinants, mathematical induction, the binomial, theorem, permutations, and combinations, series, probability, and statistics.

Ma 115 College Algebra & Trigonometry.
Cat. 1. 3 hrs.
Prerequisites: none.
The course will give management majors the background in algebra and trigonometry needed for the calculus. Open to Management Majors only.

Ma 120 College Trigonometry.
Cat. 1. 3 hrs.
Prerequisites: none.
Plane trigonometry useful in the teaching of mathematics in the secondary schools and required for the study of calculus; trigonometry of the general angle, the use of logarithms, solution of right triangles, radian measure, identities and other topics.

Ma 130 Modern Mathematics for Elementary Majors.
Cat. 1. 3 hrs.
Prerequisites: none.
Mathematical concepts needed to teach any of the new approaches found in modern arithmetic textbooks; prepares prospective teachers for inevitable future changes in mathematics curricula: the structure of the numbers system; algebraic systems; non-credit for math majors.

Ma 131 Modern Geometry for Elementary Majors.
Cat. 1. 3 hrs.
Prerequisites: 2 years high school college preparatory math. Geometric concepts from an intuitive point of view; sets of points in a plane will include measurement of length and angles, simple closed curves, circles, mathematical constructions, congruent sets of points, area of plane regions, and graphs of points in plane; non-credit for math majors.

Ma 140 Problem Solving.
Cat. 1. 1 hr.
Prerequisite: High school algebra.
Develops skill in translating word problems into mathematical language; types of problems and basic relationship are discussed.

Ma 160 Survey of Mathematics I.
Cat. I. 3 hrs.
Prerequisites: none.

Ma 161 Survey of Mathematics II.
Cat. I. 3 hrs.
Prerequisites: none.
Topics to convey an appreciation of mathematics such as logic, algebra, geometry, number theory, probability and statistics, and others.

Ma 170 Analytical Geometry.
Cat. I. 3 hrs.
Prerequisites: none.
Essential classical topics of analytical geometry; graphs and their uses, and applications to empirical curve fitting.

Ma 220 Modern Mathematics I
Cat. 1. 3 hrs.
Prerequisites: none.
Relations, functions, binary operations, groups, rings, fields, the structure of the number system, and numeration systems.

Ma 221 Modern Mathematics II
Cat. 1. 3 hrs.
Prerequisites: Ma 220.
Continuation of Ma 220; algebraic structures, equivalence relations; inequalities; construction of the rationals.

Ma 225 Business Math I.
Cat. I. 3 hrs.
Prerequisites: none.
Topics include checking accounts, payroll, simple interest, notes, discount, consumer interest, financial statements, retailing and investments.

Ma 250 Introduction to StatisticsI.
Cat. 1. 3 hrs.
Prerequisites: none.
Probability and basic statistical techniques and decision making as they are applied to data.

Ma 251 Introduction to Statistics II.
Cat. 1. 3 hrs.
Prerequisites: Ma 250 or equivalent or permission of Instructor.
Continuation of Ma 250; including such topics as regression, correlation, Chi-square and contingency tables, analysis of variance and sampling techniques; use of computers will be employed.

Ma 300 Calculus I.
Cat. 1. 4 hrs.
Prerequisites: Trigonometry, Ma 120.
Rate of change of a function; limits, derivatives of algebraic functions and applications of the derivative; integration of algebraic functions and trigonometric functions.

Ma 301 Calculus II.
Cat. 1. 4 hrs.
Prerequisite: Ma 300.
Continuation of Ma 300; integration, applications of the definite integral, transcendental functions and methods of integration.

Ma 302 Calculus I For Management.
Cat. 1. 4 hrs.
Prerequisites: Ma 115, College Algebra and Trigonometry.
Rate of change of a function, limits, derivatives of algebraic functions, applications of the derivative with emphasis on business applications.

Ma 303 Calculus II For Management.
Cat. 3. 4 hrs.
Prerequisites: Ma 302.
Continuation of Ma 302; Integration, applications of the integral with emphasis on business applications.

Ma 305 Abstract Algebra.
Cat. 3. 3 hrs.
Prerequisites: Ma 220
Fundamental concepts of sets, mathematical systems, groups, rings, and fields.

Ma 310 Calculus III.
Cat. 1. 3 hrs.
Prerequisites: Ma 301.
Analytical geometry of the conic sections, hyperbolic functions, polar coordinates, solid analytic geometry and elementary vector and analysis.

Ma 311 Calculus IV.
Cat. 1. 3 hrs.
Prerequisites: Ma 310.
Continuation of Ma 310; partial differentiation, multiple integration, infinite series, and complex numbers and functions.

Ma 320 Ordinary Differential Equations.
Cat. I. 3 hrs.
Prerequisite: Ma 311 (or as co-requisite).
Theory and application of ordinary differential equations fo the first and second orders, with linear constant-coefficient type; partial differential equations.

Ma 325 Introduction to Quantitative Methods.
Cat. I. 3 hrs.
Prerequisites: Basic probability and statistics, mathematics of finance, linear programming, simplex method, replacement problems, queuing theory, elementary game theory, inventory control models.

Ma 330 Linear Algebra.
Cat. 2. 3 hrs.
Prerequisites: Ma 301.
Solutions of simultaneous equations by means of matrices and determinants; Elementary properties of vector spaces, linear transformations, characteristic values and bi-linear and quadratic forms.

Ma 334 Statics.
Cat. 3. 3 hrs.
Prerequisites: Py 121 and Ma 310.
Forces and moments with emphasis upon mathematical and physical formulation of principles underlying the solution of engineering problems, vector algebra; equilibrium; centroids and moments of inertia.

Ma 336 Dynamics.
Cat. 3. 3 hrs.
Prerequisites: Ce 300.
Rectilinear and curvilinear motion of a particle, relative motion, harmonic motion, variable velocities and accelerations, the work-energy principle, impulse and momentum.

Ma 338 Surveying.
Cat. 3. 3 hrs.
Prerequisites: Ma 120 or equivalent.
Use, care and adjustment of surveying instruments, boundary surveys, horizontal and vertical curves, earthwork and topography, field and laboratory work along with lectures.

Ma 340 Modern Geometry I.
Cat. 2. 3 hrs.
Prerequisite: none

Ma 341 Modern Geometry II.
Cat. 3. 3 hrs.
Prerequisites: Ma 340
Ma 340 - axiomatic geometry with emphasis on Euclidean geometry; non-Euclidean geometrics; principle of duality; Desargues', Pascal's and Brianchon's theorems; harmonic sets and divisions; cross ratio and others.
Ma 341 - continuation of Modern Geometry I; with topics from Projective Geometry.

Ma 350 History of Mathematics.
Cat. 2. 3 hrs.
Prerequisites: None.
Surveys the developments of algebra, arithmetic, plane geometry and trigonometry by tracing certain fundamental concepts in mathematics such as number, counting, relations, and others; deductive and inductive reasoning from an axiomatic approach; starts with Euclid and ends with the 20th century.

Ma 360 Number Theory.
Cat. 2. 3 hrs.
Prerequisites: Ma 220 or Ma 130.
Topics from the theory of numbers; divisibility properties of integers, prime numbers, the Euclidean algorithm, the unique factorization theorem, congruences, Diophantine equations, quadratic reciprocity, number theoretic functions.

Ma 370 Introduction to Actuarial Science.
Cat. 3. 3 hrs.
Prerequisites: Ma 301.
Mathematical theory of compound interest with applications to the solution of interest problems.

Ma 375 Life Contingencies.
Cat. 3. 3 hrs.
Prerequisites: Ma 370.
A survey of the fundamental principles of life contingencies with applications to American life insurance practice.

Ma 380 Probability.
Cat. 3. 3 hrs.
Prerequisites: Ma 311.
Methods for interpreting the results of experiments; distributions, probability, random variables, binomial probability, normal probability.

Ma 381 Mathematical Statistics.
Cat. 3. 3 hrs.
Prerequisites: Ma 380.
Sequel to Ma 380; sampling distributions, point and interval estimation, tests of hypotheses, regression and correlation, analysis of variance, decision theory.

Ma 401 Ring Theory.
Cat. 3. 3 hrs.
Prerequisites: Ma 305.
Isomorphism theorems; integral domains and fields; maximal, prime and primary ideals; divisibility theory; poly-nomial rings, radicals; direct sums.

Ma 410 Advanced Calculus I.
Cat. 2. 3 hrs.
Prerequisites: Ma 311.
Elementary topology; definition and properties of functions; rigorous treatment of integration: Taylor's theorem; infinite series and power series.

Ma 411 Advanced Calculus II.
Cat. 2. 3 hrs.
Prerequisites: Ma 410.
Continuation of Ma 410; functions of several variables; introduction to different geometry, differential forms, theorems of Gauss, Green and Stokes; Lebesque integration may be included.

Ma 425 An Introduction to Partial Differential Equations.
Cat. 3. 3 hrs.
Prerequisites: Ma 320 or equivalent.
Solutions and techniques regarding partial differential equations for math and science students.

Ma 430 Topology.
Cat. 3. 3 hrs.
Prerequisites: Ma 311, Ma 220.
Algebra of sets; cardinal and ordinal numbers; topological spaces; connectedness, compactness, and continuity; separation and countability; axioms; metric spaces; complete metric spaces; product spaces; function and quotient spaces.

Ma 440 Introduction to Numerical Analysis.
Cat. 3. 3 hrs.
Prerequisites: Calculus IV or equivalent or permission of the Instructor.
Methods for solutions of equations, for physics and mathematics majors or minors and computer science students; a laboratory session in conjunction with the lectures with some computing devices and techniques.

Ma 441 Numerical Methods.
Cat. 3. 3 hrs.
Prerequisites: Ma 440.
Numerical methods for solving differential equations in electrical, mechanical, chemical, biological, and other physical problems; a laboratory session in conjunction with the lectures with some computing devices and techniques.

Ma 450 Complex Variables.
Cat. 3. 3 hrs.
Prerequisites: Ma 311.
Theory of functions of a complex variable; complex numbers, functions, limits and continuity, differentiation, Cauchy-Riemann Equations, Cauchy's Theorm, Taylor and Laurent series, residues and poles.

Ma 500 Independent Study in Mathematics.
Cat. 3. 1-3 hrs.
Prerequisites: Consent of department chairman.
Special topics not normally covered in course work; subject matter varies to suit individual and may be related to research activity of the Instructor.

Media

Professor:
Joyce

Associate Professor:
Davis, McGough

Assistant Professor:
Byers, Mitchell, Piccolo, Shea, Seiffer

The Department of Media offers a major in print, audiovisual and performance media designed to provide students with an understanding of skills in communication processes, particularly those involving vocal, mechanical, electronic, or theatrical channels. The curriculum is designed also to prepare students who so desire to work at the beginning professional level in institutions, organizations, or independently, in situations in which communication technology, library media, or the creation of communications for instructional or dramatic purposes play a part.

Four options are offered: Educational Media, Library Associate, Communication Technology, and Theatre Arts. Educational Media is intended to prepare students wishing to become certified school librarians or to provide a base for those wishing to complete their certification for audiovisual media specialization at the graduate level. The Library Associate option is intended for those wishing to enter public or academic libraries at the paraprofessional level. Communication Technology is a general option intended to prepare students to work in non-educational situations using production and presentation skills involving media technology. Theatre Arts prepares the student in the areas of script writing, direction, acting, costume and makeup, and presentation of performance media.

The Department aims also to assist students majoring in other areas to gain understanding and skill in communication processes related to their primary subject disciplines, through courses in research, the use of modern resources and technology, and methods of presenting information effectively at all levels.

Any student in the college outside the Department may elect a minor in Media. A minimum of 18 semester hours of Departmental offerings is required. Consultation with one's major advisor and the chairman of the Department of Media is strongly recommended in order that the student's educational and career goals may best be furthered.

Elementary Education majors may take the School Librarian certification sequence and meet the legal requirements to practice in the schools of Massachusetts. This sequence of 21 hours requires that the student take the following courses: Introduction to Media, Introduction to Reference Sources, Cataloging and Organizing Learning Materials, Learning Resources for Children, Administration of the School Learning Resources Center, The Library-Media Specialist in the Learning Process, and Practicum in School Library/Media. Students who have decided to embark on this program after consulting with their major advisor must ask the Department of Media's chairman to assign an ancillary advisor.

A student majoring in a certifiable teaching subject and minoring in Secondary Education may work toward a school librarian's certificate by following the same path but substituting Learning Resources for Young Adults for Learning Resources for Children.

As an alternative the Elementary Education major may elect up to 12 semester hours in SPECIALIZED PROFESSIONAL EDUCATION in either school library or audiovisual media courses.

INTERNSHIPS

Advanced students are urged to undertake internships in community organizations with media service needs appropriate to their competencies. Juniors should consult with their advisors concerning placement in either ME 630 Practicum in School Library/Media or ME 635 Cooperative Experience In-Media.

MEDIA MAJOR REQUIREMENTS

The media program requires that all majors take ME 100 Introduction to Media, which is intended to provide a common background of knowledge and a frame of reference defining the fields Media encompasses. In addition, the major must take at least 27 semester hours in the Department or in approved auxiliary courses to complete 30 hours. A minimum of 86 hours in courses outside of the major is required.

Once ME-100 is completed, the student may then select —— with the approval of his/her advisor —— those courses that will assist in achieving the student's educational and/or career goals.

Students opting for Theatre Arts must take ME-135 Oral Interpretation of Literature and ME-191 Introduction to Theatre in addition to ME 100.

Media major should maintain a 2.5 quality point average in Media.

CERTIFICATION AS A SCHOOL LIBRARIAN IN MASSACHUSETTS

1. It is recommended that the student attain a teaching certificate as well as a school librarian's certificate.
2. The preferred program involves a major in elementary education and a minor in school library science.
3. The Educational Media Specialist Major option is not intended solely to meet the current Massachusetts school librarian certification regulations. The plan for this option is to ask for program certification under the alternate certification law and the Interstate Certification Compact. Such program certification requires a fully-developed curriculum in education and school library science.

CERTIFICATION AS AN AUDIOVISUAL MEDIA SPECIALIST IN MASSACHUSETTS

1. The program is not intended to provide certification for Audiovisual Media Specialists under the current Massachusetts certification law.
2. A student wishing to attain a certificate as an Audiovisual Media Specialist is advised to seek a secondary or elementary school teaching certificate and elect media as one minor subject. The full course requirements in media would be met at the graduate level.

RECOMMENDED PROGRAMS FOR MAJORS IN MEDIA (B.A./B.S.)

Option I: Educational Media

FRESHMAN

Fall Semester

Spring Semester

*Me 100 Introduction to Media

SOPHOMORE

Fall Semester

Me 240 Utilization of Instructional Materials

Spring Semester

Me145 Preparation of Instructional Media

JUNIOR

Fall Semester

*Me 210 Introduction to References Sources
*Me 315 Cataloging and Organizing Learning Materials

Spring Semester

*Me 330 Learning Resources for Children
(or)
*Me 335 Learning Resources for Young Adults

SENIOR

Fall Semester

*Me 400 Administration of the School Learning Resources Center
*Me 402 Administration of Audiovisual Services

Spring Semester

*Me 420 Library/Media Specialist in the Learning Process
*Me 635 Practicum in School Library/Media
Me 470 Communication Theory

*Required to students seeking school library certification. These students should also be seeking a teaching certificate with either a major or minor in Education. It is important that the student teaching experience coincide with our

Option II: Library Associate Program

FRESHMAN

Fall Semester

Spring Semester

Me 100 Introduction to Media

SOPHOMORE

Fall Semester

Me 120 History of Books and Libraries

Spring Semester

Me 130 The Library as a Social Agency

JUNIOR

Fall Semester

Me 140 Utilization of Instructional Materials
Me 210 Introduction to Reference Sources

Spring Semester

Me 315 Cataloging and Organizing Learning Materials
Me 333 Selection of Library Materials

SENIOR

Fall Semester

Me 470 Communication Theory

Spring Semester

Me 635 Cooperative Experience in Media

Option III: Communication Technologist

FRESHMAN

Fall Semester

Spring Semester

Me 100 Introduction to Media

SOPHOMORE

Fall Semester

Me 125 History of Communication Technology
Me 150 Introduction to Photography

Spring Semester

Me 140 Utilization of Instructional Materials
Me 201 Sources of Media Information

JUNIOR

Fall Semester

Me 145 Preparation of Inexpensive Instructional Materials
Me 230 Photographic Design & Visual Perception

Spring Semester

Me 245 Photography and Learning Materials
Me 250 Advanced Photography
and
Me 260 Video Tape Recording
Me 350 Classroom Use of Radio and Television

SENIOR

Fall Semester

Me 340 Basic 8 mm Film Production
or
Me 480 Producing and Directing the Television Program
Me 470 Communication Theory

Spring Semester

Me 490 Education Communication and Technology
Me 635 Cooperative Experience in Media

THE THEATRE PROGRAM

The curriculum has been designed to provide students with a strong basic background in theatre practice, history and theory in several areas and at different levels. Additionally, with the close relationship which now exists between theatre arts and the electronic media, most offerings take a broad approach to make their contents relevant to motion pictures, television and radio, as well as the stage. Wherever possible, the resources of the W.S.C. television studio and videotaping facilities are utilized in the process of dramatic production and instruction.

General courses are available for students who wish to develop an appreciation of the theatrical experience and become more perceptive members of the modern audience.

For students wishing to pursue a major or minor, more specialized courses are available in the areas of Educational Theatre, Stage Production and History and Criticism, and Theatre for and with Children.

An academic major may be obtained upon successful completion of 36 semester hours of credit. The department recommends that students considering a major in Theatre plan their course of study in consultation with the program's Faculty.

A minor in Theatre may be obtained upon successful completion of 18 semester hours of credit. The department can assist students in selecting appropriate courses.

In addition to classroom courses, there are two major stage productions per year under faculty direction. Academic credit is earned by participation. Students also have the opportunity to direct one-act plays after the completion of appropriate offerings.

The department occasionally produces touring plays for performance in the classrooms of local schools. These touring productions give the students opportunity not only to act and manage performances "on the road" but also to contact child audiences directly through informal theatre and creative dramatics workshops.

Through arrangements with the Worcester Consortium for Higher Education, students may be eleigible to enroll in a limited number of theatre courses at other local colleges - Clark, Assumption and Holy Cross. This valuable option enables the students to become acquainted with a variety of teaching faculty and theatre facilities in the area.

Members of the theatre faculty can provide details of the opportunities.

RECOMMENDED PROGRAMS FOR MAJORS IN MEDIA (B.A./B.S.)

Option IV Theatre Arts Specialist

FRESHMAN

Fall Semester

Me 100 Introduction to Media

Spring Semester

Me 191 Introduction to the Theatre

SOPHOMORE

Fall Semester

Me 135 Oral Interpretation of Literature
Me 275 Scenecraft & Technical Production

Spring Semester

Me 245 Acting I
Me 276 Costume & Makeup for Performance

JUNIOR

Fall Semester

Me 137 History of Theatre
Me 216 Acting II

Spring Semester

Me 280 Direction I
Me 300 Styles of Acting

SENIOR

Fall Semeter

Me 100 American Theatre
or
Me 142 Creative Dramatics
or
Me 281 Directing II

Spring Semester

Me 240 Theatre for Children
or
Me 384 Criticism in the Media Arts
or
Me 386 Writing for Stage & Screen

Students majoring in Theatre Arts should take "Rehearsal and Performance" at least once during each Academic Year. Students minoring in theatre should take "Rehearsal and Performance" at least twice during the four year period.
NOTE: The above format is suggested. Courses may be taken out of sequence to meet individual needs. (Additions, substitutions and revisions in the sequence may be made to meet individual needs). Consult your advisor before making such changes.

ALSO AVAILABLE AND RECOMMENDED: Storytelling, Voice for the Professional, Acting Workshop, Admin. & Mgt. of the Media Arts, Elements of Screen Language, Videotape Recording, Basic 8 mm Film Production Producing and Directing the Television Program, Television for Children, Introduction to Screen Education, Independent Study in Media, Cooperative Experience in Media.
ALSO CONSIDER: Courses in other departments from the list of recommended offerings. Consortium courses. Consult the theatre Faculty for details.

DISTRIBUTION REQUIREMENTS FOR MEDIA MAJORS

Recommended electives from other disciplines.

Group I: Humanities		Hours
En 145	Introduction to Drama	3
En 168	Film and Literature	3
En 304	Technical Writing	3
En 305	Critical Writing	3
Ph-100	Logic, Knowledge and Philosophy	3
Ph-101	Introduction to Philosophy	3
Hi-101-2	History of Western Civilization	6
Hi-111-2	United States History	6

For those planning to specialize in the library area (public or academic) a reading competency in at least one foreign language is recommended.

Group II: Social Sciences		
Ec-100-1	Introduction to Macro/ Microeconomics	6
Ed-206	Introduction to Modern Education	3
Po-101	Principles of Political Science	3
So-100	Introductory Sociology	3

Group III: Arts		
Ar-100	Introduction to Art	3
Ar-105	Introduction to Design	3
Mu-240	Music Appreciation	3
Me-330	Music in America	3

Group IV: Natural Sciences and Mathematics

Ma-160-1	Survey of Mathematics I and II	6
Ma-250-1	Introduction to Statistics	6
Bi-101	Social Biology	3
Bi-111-2	General Biology I and II	6
Ch-110-1	Introduction to Chemistry I and II	6
Py-105-6	Physics for Liberal Arts Students	6
Ns-301	Science and Society	3

Other Recommendations

Mg-100	The Administrator	3
Mg-200	Fundamentals of Management and Organizational Behavior	3
Ur-101	Introduction to Urban Systems	3

COURSE DESCRIPTIONS

Me 100 Introduction to Media.
Cat. I. 3 hrs.
Prerequisites: none.
Team-taught by department members representing various areas of media library

Me 106 Library Research.
Cat. 1. 3 hrs.
Prerequisites: none.
Important sources of bibliographic information for both print and non-print media; techniques of searching, citation, and methods for completing and evaluating bibliographies

Me 110 Speech.
Cat. I. 3 hrs.
Prerequisites: none.
Stresses the formation of good speech habits. Provides a detailed study of all aspects of vocal delivery and various speaker-listener relationships, both formal and informal. Classroom opportunities to practice oral presentations in simulated speaking situations.

Me 120 History of Books and Libraries.
Cat. 3. 3 hrs.
Prerequisites: none.
Various forms of written communication throughout the ages; ways in which society has collected, preserved, and disseminated its records.

Me 125 History of Communication Technology.
Cat. I. 3 hrs.
Prerequisites: none.
How communication has been transmitted throughout the ages; concentrates on non-written forms and the mechanical and electronic instruments of communication.

Me 130 The Library As a Social Institution.
Cat. 2. 3 hrs.
Prerequisites: none.
Social, political, and economic environments which influence development of libraries and information systems and their role in a democratic society; problems and opportunities of libraries in an age of rapid change, controversy, and technology.

Me 135 Oral Interpretation of Literature.
Cat. I. 3 hrs.
Prerequisites: none.
The technique of oral expression of literature applied to a variety of material both prose and poetry; selections from non-dramatic literature, e.g., short stories, essays, lyric poetry, etc., are analyzed and presented by the student.

Me 137 History of the Theatre.
Cat. 2. 3 hrs.
Prerequisites: none.
The evolution and development of theatre from its beginnings to the present. The reading of representative plays of the period studies is required.

Me 140 Utilization of Instructional Materials.
Cat. 1. 3 hrs.
Prerequisites: none.
Selection and use of major types of audio-visual materials; use of projection and audio equipment; preparation and use of bulletins, and flannel board.

Me 145 Preparation of Inexpensive Instructional Media.
Cat.. 1. 3 hrs.
Prerequisites: none.
Laboratory practice in creating visual instructional media applying lettering, coloring and mounting techniques, end products include pictures, maps, charts, and graphs for projected and non-projected use.

Me 150 Introduction to Photography.
Cat. I. 3 hrs.
Prerequisites: none.
Basic principles, skills, techniques of photography; their application to visual communication.

Me 190 The American Theatre.
Cat. 1. 3 hrs.
Prerequisites: none.
History and nature of drama and dramatic performances from the colonial period through the present; relationship of theatre to political, cultural, and social forces and events; readings of selected plays and source material required.

Me 191 Introduction to the Theatre.
Cat. I. 3 hrs.
Prerequisites: none.
An overview of the theatrical experience, with the emphasis on its appreciation by the audience. Plays from major periods of dramatic activity provide the basis for examining the various arts and crafts within the field-acting, directing, playwriting, lighting, costuming, makeup, scenery, properties, sound, special effects, publicity and business and personnel.

Me 192 Creative Dramatics.
Cat. 2. 3 hrs.
Prerequisites: none.
Principles and techniques of leading improvised dramatic activity, particularly with children; the value of creative dramatics for furthering child development, awareness and creativity; areas include movement, mime, verbal improvisations, story dramatizations, and values teaching.

Me 193 Storytelling.
Cat. 2. 3 hrs.
Prerequisites: none.
The principles and techniques of relating poetry and prose to children. Vocal variety, interpretative approaches and methods, gesture, handling of materials, introductory and follow-up techniques are stressed. Practive in making class and laboratory presentations is provided.

Me 201 Sources of Media Information.
Cat. 2. 3 hrs.
Prerequisites: Me 100.
Sources of Media Information is the study and evaluation of reference sources useful to anyone interested in communication or educational media and technology. The most important sources of bibliographic information for persons involved in communication media will be examined as well as the most fundamental reference books in the fields of cinema , photography, radio, television and theatre. Students will use the Learning Resources Center for solving problems in the location of information.

Me 210 Introduction to Reference Sources.
Cat. 2. 3 hrs.
Prerequisites: Me 100.
Fundamental philosophy and techniques of reference service in the school library; content and use of basic reference tools with practical problems.

Me 215 Speech for the Professional.
Cat. 2. 3 hrs.
Prerequisites: Me 110 or consent of the instructor.
Theory and practice in vocal quality, articulation, accents, and interpretation; use of the microphone for radio, television, and film media. General emphasis on projection of positive personal image for the media professional.

Me 220 Principles of Graphic Communication.
Cat. 2. 3 hrs.
Prerequisites: none.
Language and design of graphic communication; principles of psychology and visual arts; laboratory exercises in creative development of opaque and transparent visual imagery as communication media.

Me 230 Photographic Design and Visual Perception.
Cat. 1. 3 hrs.
Prerequisites: Me 150 or consent of instructor.
Photographic Design and Visual Perception is a study of the relationship between Gestalt Laws of visual perception and well designed photographs. Instruction through lecture laboratory sessions and photographic assignments will provide the student with experience in defining and producing imagery exemplifying relationships of figure to ground, and tonal contrast. The focus of the course is the study of the elements of visual language and how to control these elements in the production of photographic communication.

Me 240 Elements of Screen Language.
Cat. 3. 3 hrs.
Prerequisites: none.
Images, motion, and sound in film and television; use of frame, camera viewpoint, light and shadow, color, exposure, in visual and aural communication.

Me 245 Acting I.
Cat. 1. 3 hrs.
Prerequisites: Me 135 or consent of Instructor.
The Theory and practice of basic acting principles and skills. Exercises include work on stage and camera performance techniques. Presentations of monologues and brief scenes in class.

Me 246 Acting II.
Cat. 2. 3 hrs.
Prerequisites: Continuation of Me 245; featuring a continuation of Acting I with the emphasis on further development of basic performing techniques through work on scenes from representative contemporary plays.
Practical exercises include both stage and camera skills. Some work may be done in cooperation with directing students.

Me 252 The Photographic Essay.
Cat. 2. 3hrs.
Prerequisites: Me 150 or permission of Instructor.
Offered for the Media Specialist, the course is a study of three genres of photo-essays; instructional, promotional and social interest, and the theories, methods and practices of producing them. Through regular photographic assignments students will learn techniques of image visualization and develop a personal style. Illustrated lectures, discussions and analysis of student work will form the structure of the course.

Me 255 Photography and Learning Materials.
Cat. 2. 3 hrs.
Prerequisites: Me 140, Me 145.
Principles and techniques of communication through photography, particularly with and by children; simple camera and darkroom procedures in black and white photography; use of slides and write-on acetate; audio-visual production suitable for children; students will prepare a teaching unit suitable for elementary grade pupils.

Me 260 Videotape Recording.
Cat. 1. 3 hrs.
Prerequisites: Me 145 or consent of Instructor.
Production of videotape programs using lightweight and portable equipment; incorporation of slides, stills, and other visual media with emphasis on editing form location tapes and on audio dubbing; limited to 16 students.

Me 275 Scenecraft and Technical Production. Cat. 2. 3 hrs.
Prerequisites: none.
The design and construction of scenery, the basics of lighting, sound production, the use of stage facilities, the roles of the stage manager and other behind-the-scenes personnel. Application of the above considerations to theatre productions, film making and television presentation.

Me 276 Costume and Make-up for Performance.
Cat. 2. 3 hrs.
Prerequisites: none.
Basics history, design, and practical techniques; actual construction of costumes and application of make-up will be part of the parcticum. Consideration of special problems of costume and make-up for the cinema and television.

Me 280 Directing I.
Cat. 2. 3 hrs.
Prerequisites: Me 191, Me 245.
Problems of script selection, scene analysis, style, casting, ensemble, and other concerns of the director, treated in terms of both stage and screen presentation; preparation of a production book and directing a short scene for live presentation as well as adapting it for videotaping.

Me 281 Direction II.
Cat. 2. 3 hrs.
Prerequisites: Me 280.
Continuation of Me 280. Advanced theoretical and practical problems facing the director; each student directs several scenes for classroom presentation and videotaping; major assignment is presentation and taping of one-act plays with complete production book.

Me 290 Theatre for Children.
Cat. I. 3 hrs.
Prerequisites: none.
Organization and conduct of children's theatre. The selection of a play, casting, rehearsals, make-up, central staging, and problems in putting on plays in classrooms and other limited areas.

Me 300 Styles of Acting.
Cat. 2. 3 hrs.
Prerequisites: Me 245, Me 246.
Instruction in specific acting styles representative of significant periods of theatrical activity. Development of techniques through class presentations of scenes. Practical exercises include both stage and camera skills.

Me 305 Library Skills In the Elementary School.
Cat. 2. 3 hrs.
Prerequisites: Open only to Junior and Senior elementary majors. Over
Overview of procedures and materials helpful in teaching essential library skills to elementary school pupils; information location; print and non-print sources.

Me 315 Cataloging and Organizing Learning Materials.
Cat. 1. 3 hrs.
Prerequisites: Me 100.
Principles and procedures involved in acquisition, cataloging, and processing of book and non-book materials. Skills involved in organizing various kinds of collections and in teaching others how to utilize them.

Me 320 Introduction to Screen Education.
Cat. 3. 3 hrs.
Prerequisites: none.
History and philosophy of screen education movement and its relationship to other educational philosophies; centered around concept of visually literate person; screenings of professionally and student-made films to discover communication about life, society, and education.

Me 321 Rehearsal and Performance.
Cat. 1. 1-3 hrs.
Prerequisites: none.
Registration through add-drop procedure following auditions which take place early each semester; credits vary according to involvement; table of credit values for all production functionaries is available in department production manual.

Me 322 Acting Workshop.
Cat. 3. 3 hrs.
Prerequisites: Me 246.
Specifically designed for the student who has completed Me 246 and wishes to continue to develop his/her skills; although the major emphasis will be on the development of improvisational technique through theatre games, there will be some scene studies.

Me 324 • Theatre in the Classroom.
Cat. 3. 3 hrs.
Prerequisites: Admission by interview and/or audition.
A practical educational theatre experience centering on the production of touring play(s) for child and youth audiences. Acting, directing, designing, and managerial roles will be assigned according to the personal qualifications of the student determined through audition and/or interview.

Me 330 Learning Resources for Children.
Cat. 1. 3 hrs.
Prerequisites: none.
Relates building the materials collection in the library/media center to the educational program of the modern elementary school; includes criteria of evaluating print and non-print materials; explores use and limitations of standard selection aids and reviewing media.

Me 333 Selection of Library Materials.
Cat. 2. 3 hrs.
Prerequisites: none.
Provides criteria for evaluating and selecting print and non-print materials in building public and academic library collections; considers the broad range of materials and problems associated with the acquisitions program in general library service.

Me 335 Learning Resources for Young Adults.
Cat. 1. 3 hrs.
Prerequisites: none.
Relates the acquisition of a collection of print and non-print materials to the education program of a modern secondary school; a brief selective survey of titles from the full range of media useful in supporting and complementing that program.

Me 340 Basic 8MM Film Production.
Cat. 1. 3 hrs.
Prerequisites: none.
Experience in making motion pictures of rudimentary level with or without aural tape accompaniment; critiques of student work.

Me 345 Producing and Directing Audio Programs.
Cat. 2. 3 hrs.
Prerequisites: none.
Writing, choosing talent, selecting music, and assembling audio programs; radio production; audio instructional materials; use of equipment in student production of actual materials.

Me 347 Producing Slide and Sound Programs.
Cat. 2.3 hrs.
Prerequisites: Me 150 or consent of instructor.
Planning and producing photographic sequences with appropriate music and narration; techniques of storyboarding, copying, and synchronizing audio with visual materials to convey desired messages.

Me 350 Classroom Use of Radio and Television.
Cat. 2. 3 hrs.
Prerequisites: none.
Study in depth of the use of radio and television as instructional media; lab experience in adapting these media to a variety of teaching/learning situations.

Me 355 Elements of Closed Circuit Television.
Cat. 2. 3 hrs.
Prerequisites: none.
Theory and practice in the use of closed circuit television including its employment in institutional intra-communication; emphasis is on educational utilization.

Me 360 Television for Children.
Cat. 3. 3 hrs.
Prerequisites: none.
The planning, production, and presentation of live and taped television for children.

Me 365 Advanced Photography.
Cat. 2. 3 hrs.
Prerequisites: Me 140.
Presents advances procedures of roll-film developing and printing. Students will learn ways to control the formation of negative density through precise exposure control and accurate development manipulation. Comparisons will be made between film developers and different B/W films. Printing techniques studies will enable the student to utilize controls over the exposure, development ration, and selection of paper grades in producing quality prints.

Me 370 Creative Techniques of Advertising and Publicity.
Cat. 3. 3hrs.
Prerequisites: None.
The imaginative conceptualization, preparation, and dissemination of advertising and publicity, utilizing the various print and non-print media. Students plan their own campaigns as part of the semester's work.

Me 375 Administration of the Performance Media.
Cat. 2. 3 Hrs.
Prerequisites: none.
The principles and techniques of organizing and administering theatre, film, and television producing organizations, production companies, media arts programs, events and performances in the commercial and non-commercial sectors. All non-artistic processes and personnel will be considered within a framework of ethics, aesthetics, responsibility, and accountability.

Me 384 Criticism of the Performance Media.
Cat. 3. 3 hrs.
Prerequisites: none.
Analysis of representative criticism appropriate to radio, television, film, theatre, and public address after sharing performance media experiences.

Me 386 Writing for Stage and Screen.
Cat. 2. 3 hrs.
Prerequisites: none.
Creating dramatic material for television, motion pictures, the theatre, and radio. Although the emphasis will be on fiction, documentary scripting will be included. Completion of a script is required.

Me 400 Administration of the School Learning Resources Center.
Cat. 1. 3 hrs.
Prerequisites: none.
Theory and practice of organizing and administering library of materials and program of service fundamental to achievement of educational goals of modern school; covers print and non-print materials.

Me 402 Administration of Audiovisual Services.
Cat. 1. 3 hrs.
Prerequisites: Me 400 or consent of the Instructor. Principles and methodology of organizing and administering production and projection services provided in learning resources centers in organization with programs of education.

Me 420 The Library-Media Specialist in Learning Process.
Cat. I. 3 hrs.
Prerequisites: Open only to educational media specialists in their senior year. Examines the development of curriculum and instruction through the complilation of resource units which include appropriate materials from the complete range of available media; and her/his competence to offer guidance and services in use of materials using *BEHAVIORAL REQUIREMENTS ANALYSIS CHECKLIST.*

Me 470 Communication Theory.
Cat. 2. 3 hrs.
Prerequisites: none.
Theories of communication; identification of modes and channels; practical experience in designing and disseminating messages.

Me 480 Producing and Directing the Television Program.
Cat. 2. 3 hrs.
Prerequisite: Me 345.
Sound, lighting, graphics, staging, direction, and equipment operation with the hands on practical experience.

Me 494 Bibliography of Medicine.
Cat. 2. 3 hrs.
Prerequisite: none.
Literature and reference sources in medicine, dentistry, pharmacy, nursing, and public health; includes classification of medical literature.

Me 500 Independent Study in Media.
Cat. 1. 1-3 hrs.
Prerequisites: Me 100 and consent of Advisor.
Permits advanced students to investigate topic of special interst and relevance to his/her goals; permits experiment, documentary research, and/or production of learning, resources, presentation media, or theatre project. Periodic consultations with advisor.

Me 630 Practicum in School Library/ Media.
Cat. 1. 3 hrs.
Prerequisite: Open only to educational media specialists in their senior year.

Required for students in school library/ media certification programs; affords opportunity to work in cooperating school library/media center under supervision of an experienced library/media specialist.

Me 635 Cooperative Experience in Media.
Cat. 2. 1-6 hrs.
Prerequisites: Any two Media courses.
Open to Media minors. Provides an opportunity to increase experience through an internship with a sponsoring community organizaiton, institution, or business; objective of the experience will form basis for a written contract between the student and his Faculty Advisor.

Course Numbering

1. Courses at 100 level are intended courses for majors or minors or as Distribution courses.
2. Courses at 200 level are intended as sophomore level courses; 300 level for Juniors; 400 level for Seniors.
3. Course at 500 level, independent study.
4. Courses at 600 level are internship courses.

Minor in Middle East Studies

MINOR IN MIDDLE EAST STUDIES

At no time in history has the study of the Middle East been as necessary from the standpoint of the West as it is today. The region's economic wealth and its endemic political instability make it a focal point of international rivalry. Western Europe imports over 75% of its energy from the Middle East; Japan imports over 90%; and American dependence on Middle East oil grows daily. American workers in ever increasing numbers find employment in the many nations of the Middle East. More than thirty thousand American are currently working in Saudi Arabia in some capacity or other. The projected number of American who will be employed in Iran by 1980 is fifty thousand. Thousands of American factory workers owe their jobs to the high demand in the Middle East for American exports. Yet, the Middle East continues to be one of the least understood regions by the West. It is for these reasons that Worcester State College has approved the proposed interdisciplinary minor in Middle East Studies.

Several departments closely cooperated to make this program a reality. These departments are: Art, Foreign Languages, Geography & Geology, History & Political Science, Philosophy, and Sociology.

Minor Requirements: A minimum of 18 credit hours are required to complete a minor in Middle East Studies — nine of which are required courses and nine to be elected from the courses on the Middle East offered by the participating departments.

Required Courses:
Geography of the Middle East 3 credit hrs.
Medieval Middle East History 3 credit hrs.
Modern Middle East History 3 credit hrs.

Schedule of Courses:
A course in eigher Arabic or Hebrew is *strongly recommended.*

Medieval Middle East History I
Modern Middle East History II

Politics of the Middle East I
Geography of the Middle East
Elementary Arabic I
Elementary Arabic II
Elementary Hebrew I (consortium)
Elementary Hebrew II (consortium)
Religions of the Middle East
Social Change in the Middle East
Art in the Middle East
Social Institutions in the Middle East

Islam Philosophy or Religion
Sociology of the Middle Eastern Family
Seminar on the Middle East I
(Interdisciplinary Staff seminar)

The minor in Middle East Studies can be of great interest to the curious student, to the businessman, to the traveler, to the tourist, to students who intend to join the Foreign Service or private companies in the Middle East, and to students who intend to do graduate work in that area.

For further information see:
Director of Academic Advising or Professor Najib E. Saliba (history).

Music

Associate Professor:
Kaminsky

Assistant Professor:
Celona, Sahagian

To meet the needs of students who wish to fulfill their fine arts requirements in music and for music minors, the Music Department offers a choice of courses in the literature and theory of music and in music education. For those who wish to take part in choral or instrumental activities, either individually or with a group, there are electives in applied music which can be repeated each semester for credit. These include the College Choir, the New Worcester State College Minstrels, the College Community Orchestra, the Concert Band, and Instrumental Ensembles in brass and woodwinds. These organizations participate in concerts at the college, in the community, in exchange concerts with other colleges. These organizations have made significant contributions to the cultural life of the college and the community.

The department considers appreciation, understanding, progress, and quality of music as its goals. Music as an educational factor in developing and broadening the individual student is also an important part of its philosophy.

One of the largest organizations of the college is the Choir. This is made up of men and women who are selected on a try-out basis. Highlights of the year are the Christmas and Spring concerts. In addition, there is the New Worcester State College Minstrels which also takes part in college concerts and exchange programs. A wide variety of musical types and styles are sung. Admission is by audition during the first two weeks of each semester.

The College Community Orchestra, Concert Band and Instrumental Ensembles are open to instrumentalists who wish to develop and progress in their appreciation and understanding of standard repertoire, techniques of concert performance, and instrumental routine. These organizations

take part in programs both at and away from the college.

A major in Music is not available at the present time. A student, however, may elect a program of courses leading to a minor in Music.

RECOMMENDED PROGRAM FOR A MINOR IN MUSIC

Mu 241, 242 History and Literature of Music I and II; Mu 110 Music Fundamental; Mu 130 Harmony (Prerequisite Mu 110); Six hours in any music courses (except Mu 240, Music Appreciation) with a maximum of three hours credit only in Applied Music. The advice of the Music Department is required.

COURSE DESCRIPTIONS

Mu 110 Music Fundamentals.
Cat. 1. 3 hrs.
Prerequisites: none.
Acquaints students with the basic materials of music through singing and auralization of simple rhythms, intervals, melodies in both major and minor modes; directed listening and use of simple percussion, melodic, and chordal instruments.

Mu 120 Functional Keyboard and Sight-singing.
Cat. I. 3 hrs.
Prerequisites: Mu 110 Introduction to Music.
Ear training and development of skills through sight and singing, tonal-rhythmic dictation and keyboard exercises; discussion of individual interests and needs in strengthening weakness or aptitudes in music.

Mu 130 Harmony I.
Cat. 1. 3 hrs.
Prerequisites: Mu 110 and consent of Instructor.
Traditional disciplines of harmonization including basic chordal structures, ear-training through tonal-rhythmic dictation and keyboard harmony.

Mu 131 Harmony II.
Cat. I. 3 hrs.
Prerequisites: Mu 130.
Four-part harmonization of melodies using primary and secondary chords, non-harmonic tones and simple modulation to closely related keys: harmonic analysis, keyboard harmony and ear-training.

Mu 140 Choir.
Cat. 1. ½ hr.
Prerequisites: none.
Mixed chorus repertoire; concentration on vocal problems and techniques; admission by audition.

Mu 150 Folkgroup.
Cat. 1. ½ hr.
Prerequisites: none.
Training in musicianship and finesse; required to sing music especially written for female voices; admission by audition.

Mu 160 Orchestra.
Cat. 1. ½ hr.
Prerequisites: none.
Study of standard symphonic repertoire; techniques of orchestral routine and performance; admission by audition.

Mu 170 Concert Band.
Cat. 1. ½ hr.
Prerequisites: none.
Study and experience in repertoire and per= formance; admission by audition.

Mu 180 Strings.
Cat. 1. 1 hr.
Prerequisites: Enrollment by permission of Instructor.
Individual or class instruction in violin, viola, cello, bass; open to students with previous training.

Mu 190 Winds.
Cat. 1. 1 hr.
Prerequisites: Enrollment by permission of Instructor.
Individual or class instruction in woodwinds or brass; open to student with previous training.

Mu 200 Piano.
Cat. 3. 1 hr.
Prerequisites: Enrollment by permission of Instructor.
Individual insdtruction; open only to more advanced students with previous training.

Mu 210 Voice.
Cat. 3. 1 hr.
Prerequisites: Enrollment by permission of Instructor.
Individual instruction; open only to more advanced students with previous training.

Mu 240 Music Appreciation.
Cat. 1. 3 hrs.
Prerequisites: none.
Historical and critical study of music from Middle Ages to modern times; no credit given for this course to those who have successfully completed Mu 241 and/or Mu 242.

Mu 241 History and Literature of Music I.
Cat. 1. 3 hrs.
Prerequisites: none.
From the legacy of Greece and Rome to the early Romantic composers.

Mu 242 History and Literature of Music II.
Cat. 1. 3 hrs.
Prerequisites: none.
Continuation of Mu 241; the Romantic Period to Contemporary twentieth century innovations and techniques.

Mu 250 Opera.
Cat. 1. 3 hrs.
Prerequisites: none.
Analysis of the masterworks of standard operatic repertoire; use of recordings and tapes.

Mu 260 Music of the Baroque Period.
Cat. 2. 3 hrs.
Prerequisites: none.
The period of 1600-1750; emphasis on Bach and Handel.

Mu 270 Music of the Classical Period.
Cat. 2. 3 hrs.
Prerequisites: none.
Progressing from the Rococo to the masterworks of Haydn, Mozart and Beethoven.

Mu 275 Music of the Romantic Period.
Cat. 1. 3 hrs.
Prerequisites: none.
A general listener's approach to the instrumental and vocal music of Schubert, Chopin, Schumann, and Mendelssohn through Liszt, Berlioz, Verdi, Wagner, Brahms, Tschaikowsky and other 19th century composers.

Mu 280 Twentieth Century Music.
Cat. 1. 3 hrs.
Prerequisites: none.
From the impressionists through Stravinsky, the Schoenberg school, Bartok, Hindemith, and other significant composers including electronic and aleatory music.

Mu 290 The Golden Era of Piano Music.
Cat. 2. 3 hrs.
Prerequisites: none.
Beginning with the piano works of Beethoven and continuing through the Romantic tradition to the impressionists.

Mu 300 Symphonic Music.
Cat. 2. 3 hrs.
Symphonic masterpieces of the 18th and 19th centuries from Haydn to Richard Strauss.

Mu 310 The Concerto.
Cat. 2. 3 hrs.
Prerequisites: none.
History and development beginning with the concertato style in the Baroque period; Haydn to present,

Mu 320 Chamber Music Literature.
Cat. 2. 3 hrs.
Prerequisites: none.
Development, history, and literature of chamber music; emphasis on the 18th and 19th centuries.

Mu 330 Music in America.
Cat. 2. 3 hrs.
Prerequisites: none.
Survey of music history and literature in America from the early colonies to the present, including jazz and other mediums.

Mu 340 Form and Analysis.
Cat. 2. 3 hrs.
Prerequisites: Mu 241, Mu 131.
An introduction to the stylistic analysis of the formal structures of music.

Mu 400 Field Experience in Music Education.
Cat. 1. 2 hrs.
Prerequisites: Music concentration elementary majors, Ed 255 - Music in the Elementary School.
Directed experience in organizing and directing music activities for students in the elementary schools; coordinating seminar on a regular basis on campus.

Mu 500 Independent Study in Music.
Cat. 1. 1-3 hrs.
Prerequisites: Consent of Instructor.
An opportunity for further study in a special field of interest under faculty supervision.

Natural Science and Physics

Professor:
Chapman, Glassbrenner

Associate Professor:
Garrett, Kelley, Leonard

Assistant Professor:
Belanger

Students may elect courses in the Physics Department to gain an appreciation of physics fundamentals as part of a broad education, or to obtain background for technical science courses. Science oriented students minoring in secondary education may major in physics or form a major in Natural Science by taking a sampling of physics courses along with science courses in other fields. Students majoring in physics should note that graduate study is considered essential for a career in physics.

Physics Major Requirements

Physics majors must complete a minimum of 30 credit hours in courses offered by the Physics Department. Mathematical Physics I and II, Mechanics I, and Electricity and Magnetism I are required of all physics majors. In addition, the department required a minimum of one year of calculus and one year of chemistry.

Students are expected to enroll in required major courses in a sequence that meets prerequisite as outlined in the Recommended Program for Physics Major (BA/BS). Semester programs will be planned according to the student's background and progress shown in ancillary courses. Semester programs must be planned by the student in concert with his/her major advisor. The physics elective courses should be selected to fit the needs and future plans of the individual student.

RECOMMENDED PROGRAM FOR PHYSICS MAJOR (B.A./B.S.)

FRESHMAN

Fall Semester

Physics I or General Physics I*
Calculus I or Algebra, or Trigonometry I**

Spring Semester

Physics II or General Physics II
Calculus II or Algebra, or Trigonometry II

SOPHOMORES

Fall Semester

Mathematical Physics I

Spring Semester

Mathematical Physics II

JUNIORS

Fall Semester

Electricity & Magnetism I or Mechanics I
Physics electives

Spring Semester ***

Electricity & Magnetism II or Mechanics II
Physics elective

SENIORS

Fall Semester ***

Electricity & Magnetism I or Mechanics I

Spring Semester

Electricity & Magnetism II or Mechanics II

* Accelerate if Calculus I is taken, then Physics I.
** Calculus is a pre-requisite but may be taken concurrently.
*** Minors in secondary education must make an adjustment in the physics program; see the model for secondary education.

RECOMMENDED PROGRAM FOR PHYSICS MINORS

General Physics I & II or Physics I & II; Mathematic Physics; Instrumentation & Electrical Measurements; Modern Physics; and Physics of Urban & Environmental Problems.

NATURAL SCIENCE MAJOR REQUIREMENTS

This major is an interdepartmental program, administered through the Department of Natural Science and Physics and structured with the aid of an advisory committee consisting of represnetatives from the following departments: biology, chemistry, geography, mathematics and physics. The program is designed to give a broader view of the sciences than is usually obtained in a traditional undergraduate major in a single science. Students electing this major should be aware that a lack of depth in a single science will usually limit the opportunities for graduate study in a single science. The major is ideally suited for preparation of science teachers in the areas of general science, earth science, and physical science. Concentration in mathematics, computer science, and environmental science may be arranged.

A minimum of 38 semester hours is required for this major. The student must choose courses from the offerings of the above mentioned departments to provide the following minimum distribution: Two semesters of approved mathematics, four semesters in any one science, and two semesters in each of any other two sciences. Students are expected to successfully complete the course, Natural Science Seminar and the required project work. Semester programs must be planned by the student with the guidance of his/her major advisor. Students are expected to enroll in distribution and elective courses each semester. Supportive or "tool" courses should be completed early in one major program of study.

Nuclear Medicine Technology - See Write-Up under Department of Biology

RECOMMENDED PROGRAM FOR NATURAL SCIENCE MAJORS (B.A./B.S.)

FRESHMAN

Fall Semester

College Algebra or Calculus I
Physical Science I or General Physics I
General Biology or Botany I
Distribution Elective

Spring Semester

Trigonometry or Calculus II
Physical Science II or General Physics II
General Biology II or General Zoology I
Distribution Elective

SOPHOMORE

During the second year, students should complete the natural science recommended core requirements — six one semester courses. A suggested pattern follows:

Life Science Concentration
General Botany
General Zoology
General Chemistry I & Ii

Physical Science
General Chemistry I & II
Calculus I & II
General Physics

Earth & Space Science
Physical Geography
Geology I
General Chemistry I & II

Computer Science
Introduction to Computer Science
Computer Program & Fortran IV
Science Electives

Environmental Science
General Physics or Physical Science
Intro. to General,Organic & Biochemistry
General Botony and Zoology
Statistics or approved math course
Intro. to computer Programming

Technologist Training
General Physics
General Chemistry
Algebra & Trigonometry
General Biology

JUNIOR & SENIOR

Because of the nature of the natural science major, the student is well-advised to plan his program of studies in natural science at these levels with the consultation of his/her Faculty Advisor.

COURSE DESCRIPTIONS

Ns 101 Physical Science I.
Cat. 1. 3 hrs.
Prerequisites: none.
Survey of physics and chemistry; evolution of concepts and theories; measurement, gravitation, energy, conservation laws, kinetic molecular theory, and wave motion.

Ns 102 Physical Science II.
Cat. 1. 3 hrs.
Prerequisites: Ns 101 or consent of Instructor.
Continuation of Ns 101; light, electricity, magnetism, fundamentals of chemistry, atoms and molecules, the structure of atoms, quantum theory and relativity.

Ns 103 Physical Science Laboratory I.
Cat. 1. 1 hr.
Prerequisites: to be taken concurrently with Ns 101 or after completing Ns 101.
Laboratory methods and techniques associated with topics included in Ns 102.

Ns 104 Physical Science Laboratory II.
Cat. 1. 1 hr.
Prerequisites: to be taken concurrently with Ns 102 or after completing Ns 102.
Laboratory methods and techniques associated with topics included in Ns 102.

Ns 105 Introduction to Astronomy.
Cat. 1. 3 hrs.
Prerequisites: none.
The tools of the astronomer, the nature of celestrial space; star locations, motions, nature and evolution; the universe; three lectures per week.

Ns 108 Developments in Physical Science Since 1800.
Cat. 1. 3 hrs.
Prerequisites: none.
Chronological development of some of the significant discoveries which will lead to the present understanding of the nature of matter from a descriptive, non-mathematical consideration of the contributions of such scientists — Faraday, Rutherford, the Curies, Einstein and others. The student will gain an appreciation of the sequential manner in which some of the mysteries of nature are resolved.

Ns 109 Fundamentals of Laboratory Technique.
Cat. 1. 3 hrs.
Prerequisites: none.
Provides an opportunity to become familiar with some of the simple equipment and operations employed in the physical science laboratory; properties of common substances determined by means of data which may required that fabrication of the measuring apparatus; activities such as the verifying of manufacturer's claims as they may relate to density, tensile strength, viscosity, etc., conducted; some of the procedures and standards employed by A.S.T.M. introduced and students encouraged to "think metric".

Ns 301 Science and Society.
Cat. 1. 3 hrs.
Prerequisites: none.
Physics examined in a historical and social context; the impact of science on man's interpretation of the natural world, social activities such as economics and war, and the "humanistic" disciplines; recommended for non-science majors interested in studying the implications of science in the modern world.

Ns 400 Natural Science Seminar.
Cat. I. 3 hrs.
Prerequisites: permission of department.
Discussions of contemporary developments in the natural sciences; emphasis on the technical literature, independent projects or studies, and the preparation and presentation of technical papers.

Ns 500 Independent Studies in Natural Science.
Cat. 1. 1-3 hrs.
Prerequisites: 24 semester hours in science, 4 courses in one science.
Independent study on a problem mutually agreeable to the student and to the instructor, opportunity for advanced students to pursue a topic of special interest involving extensive reading, experimentation, and research; departmental permission required; course subject to Guidelines on Independent Study.

Physics

Py 105 Concepts of Physics I.
Cat. 1. 3 hrs.
Prerequisites: none.
A non-mathematical descriptive presentation of the fundamental concepts of classical physics such as — motion, energy, momentum, conservation principles and a consideration of the properties of matter; relationship of these concepts to the society and everyday life.

Py 106 Concepts II.
Cat. I. 3 hrs.
Prerequisite: none.
A qualitative approach to the fundamental notions of modern physics such as electromagnetic radiation, field theory, atomic spectra and relativity; emphasis on the students own experiences and the development of a better understanding of man's physical environment.

Py 107 Physics of Urban and Environmental Problems I.
Cat. 1. 3 hrs.
Prerequisites: none.
Motion and the use of energy sources will be discussed in the context of several urban and environmental problems; analysis will be physical and qualitative.

Py 110 Biological Physics I.
Cat. 3. 3 hrs.
Prerequisites: Six hours of biological science and/or consent of Instructor.
Traditional areas of introductory physics, such as mechanics, heat, sound, with emphasis on bio-instrumentation; two lectures and one two-hour laboratory per week.

Py 111 Biological Physics II.
Cat. 3. 3 hrs.
Prerequisite: Py 110.
Continuation of Py 110; research project required ; two lectures and one two-hour laboratory per week.

Py 114 Physics of Music.
Cat. 1. 3 hrs.
Prerequisites: none.
Introductory mechanics and wave principles will be presented as they apply to musical acoustics; practical laboratory and instrument demonstrations and some discussion of the development of musical instruments will be included.

Py 115 General Physics I.
Cat. 1. 4 hrs.
Prerequisite: One year of college mathematics, which may be taken concurrently.

The mechanics of fluids and solids, properties of matter, and heat energy; three lectures and one two-hour laboratory per week.

Py 116 General Physics II.
Cat. 1. 4 hrs.
Prerequisite: Py 115.

Continuation of Py 115; sound, theories, of light, electricity and magnetism, and topics in modern physics; three lectures and a two-hour laboratory per week.

Py 120 Physics I.
Cat. 1. 4 hrs.
Prerequisites: One year of calculus which may be taken concurrently; recommended for physics and mathematics majors.

Introduction to classical physics with emphasis on fundamental principles and conservation laws; topics include Newtonian mechanics and heat; three lectures and one two-hour laboratory per week.

Py 121 Physics II.
Cat. 1. 4 hrs.
Prerequisites: Py 120.
Continuation of Py 120; properties of the electro-magnetic field and wave phenomena; three lectures and one two-hour laboratory per week.

Py 201 Mathematical Physics I.
Cat. 1. 3 hrs.
Prerequisites: none.
Applied mathematics for students majoring in science or mathematics; series, expansions, use of complex numbers, determinants, and matrices, partial derivatives and multiple integrals; three lectures per week.

Py 202 Mathematical Physics II.
Cat. 1. 3 hrs.
Prerequisites: Py 201.
Continuation of Py 201; vector analysis; Fourier series, ordinary differential equations; three lectures per week.

Py 210 Mechanics I.
Cat. 2. 4 hrs.
Prerequisites: Py 121, Ma 211, and Py 201 which may be taken concurrently.

Kinematics and dynamics of point masses, the conservation laws, motion of a system of particles, special theory of relativity, Lagrange's and Hamilton's equations; three lectures and one two-hour laboratory per week.

Py 211 Mechanics II.
Cat. 2. 4 hrs.
Prerequisites: Py 210.
Continuation of Py 210; continuum mechanics, mechanics of rigid bodies, theory of vibrations; three lectures and one two-hour laboratory per week.

Py 220 Thermodynamics.
Cat. 3. 3 hrs.
Prerequisites: Py 121 or Py 116, and Py 201 which may be taken concurrently.
Introduction to kinetic theory and statistical mechanics; three lectures per week.

Py 230 Electricity and Magnetism.
Cat. 2. 4 hrs.
Prerequisites: Py 210 which may be taken concurrently.
Electric and magnetic properties of matter; determination of electrical potentials, field intensities, forces, and induction; the laws of electricity and magnetism in Maxwell's differential form; three lectures and one two-hour laboratory per week.

Py 231 Electricity and Magnetism II.
Cat. 2. 4 hrs.
Prerequisite: Py 230.
Continuation of Py 230, solution of Laplace's equation, further consideration of Maxwell's equations, plane waves, guided waves, dipole radiation; three lectures and one two-hour laboratory per week.

Py 240 Optics.
Cat. 2. 3 hrs.
Prerequisites: Py 116 or Py 121.
Reflection, refraction, difraction, interference and polarization; the wave model of light; three lectures per week.

Py 250 Instrumentation and Electrical Measurement.
Cat. 1. 3 hrs.
Prerequisites: none.
Electricity and electrical circuits, electronic theory and instrumentation; transducer response in scieintific measurements; electronic measurement components and systems; operational amplifiers and integrated circuits; control elements and recording devices; two two-hour lecture/labs per week.

Py 300 Investigation of Special Topics in Physics.
Cat. 3. 1-3 hrs.
Prerequisite: Consent of Instructor.
Guided-study course which offers an opportunity to make an in-depth study of a special topic in physics as determined by needs and interest of the individual student.

Py 310 Modern Physics.
Cat. 2. 3 hrs.
Prerequisites: One year of physics and one year of calculus.
The atomic nature of matter, special relativity, atomic models, the wave nature of matter, and radioactivity; three lectures per week.

Py 320 Quantum Mechanics.
Cat. 3. 3 hrs.
Prerequisite: Py 231.
The uncertainty principle, wave-particle duality, the Schrodinger equation, probability amplitudes, and applications to one-dimensional problems; three lectures per week.

Py 330 Senior Physics Laboratory.
Cat. 2. 1 hr.
Prerequisites: Py 231 or consent of Instructor. Laboratory work designed to meet the individual needs of students; experiments will be selected from electro-magnetism, optics, and modern physics; one three-hour laboratory period per week.

Nursing

Professor:
Goodman

Associate Professor:
Farrell

Assistant Professor:
Alexander, Haley, Lovering

Instructor:
Clough

The need for nurses with baccalaureate preparation has become increasingly apparent in today's society. The Nursing Department at Worcester State College now offers a major in nursing leading to a bachelor of science degree. The major is designed to meet the increasing need for nurses to have a Baccalaureate degree by providing an Upper Division Program in nursing for Registered Nurses who are graduates of accredited Diploma and Associate Degree Nursing Programs.

WSC's Nursing Department seeks to help students become enlightened citizens and professional nurses with a commitment to learning as a life-long process. It is intended that students be committed to function as an integral and vital part of the health care system in order to contribute to a better human society.

PURPOSES

1. Promote a humanistic approach to man by facilitating an understanding of his unique genetic, personal and cultural heritage as well as the environment in which he functions.
2. Foster the active process of learning by providing an environment which promotes intellectual curiosity and freedom of expression.
3. Build on knowledge gained through previous education endeavor, life and professional experiences.
4. Further develop the utilization of effective communications skills.
5. Encourage the utilization of the nursing process as a basis for making decisions and effecting change in the provision of health care.

6. Promote exploration and understanding of the independent and interdependent nursing roles within the health care system by providing a variety of selected clinical experienced within the community.
7. Enhance the ordering and synthesis of theories and concepts from the liberal arts, humanities and sciences in order to promote an integrated approach to the practice of nursing.
8. Facilitate the further development of a philosophy of nursing through exposure to a wide range of philosophical positions in nursing.
9. Promulgate the necessity for continuing professional and personal growth.

ADMISSION

Eligibility for admission into the Upper Division Baccalaureate Nursing Program depends on successful completion of a minimum of 60 undergraduate credits from an accredited college or university. The credits may be earned by: previous attendance at an accredited college or university; College Level Examination Program (CLEP - General Examinations and Subject Examinations): pre-entrance nursing examinations.

The applicant must have current license to practice nursing in the Commonwealth of Massachusetts and must have had at least one year of clinical nursing experience. References must be provided from the most recent employer and the administration of the basic nursing education program. These are to be sent to the Chairperson, Department of Nursing, Worcester State College.

The following academic prerequisites for the Upper Division Baccalaureate Program must be met.

B.S. CURRICULAR REQUIREMENTS

Foundations

English Composition	3 credits
Physical Education or Health Education	3 credits
U.S. History or U.S. Constitution	3 credits

General Education Distribution

Humanities	6 credits
Social Science	6 credits
Fine Arts	6 credits
Science/Math	6 credits

Prerequisites for the Nursing Major

Introduction to Chemistry I & II	6 credits
Human Anatomy and Physiology I & II	6 credits
Microbiology	3 credits
General Psychology	3 credits
Introduction to Sociology	3 credits
Child or Human Growth and Development	3 credits
Medical Sociology or Sociology of the Family	3 credits

Pre-entrance Nursing Examinations 12 credits

I. National League for Nursing Examinations: successful achievement based on Associate Degree score at or above 75th percentile in-

a) Nursing Care of the Adult, I, II, III
b) Maternal Child Health Nursing
c) Psychiatric Nursing.

Scores from these examinations which are available from the applicant's School of Nursing will be accepted if taken within five years prior to admission.

II. Clinical practice examination (teacher made): successful achievement at or above 75 percent.

UPPER DIVISION NURSING MAJOR REQUIREMENTS

JUNIOR

Fall Semester		Credits
Nu 410	Community Health Nursing	9
Nu 420	Introduction to Research in Nursing	3
	Elective	3
	TOTAL	15

Spring Semester		Credits
Nu 430	Advanced Nursing Therapeutic Intervention	6
Nu 440	Leadership in Nursing	3
Nu 600	Clinical Nursing	3
	Elective	3
	TOTAL	15

SENIOR

Nu 450	Nursing in Primary Care	9
Nu 500	Research Seminar in Nursing	5
	Elective	3
	TOTAL	17

COURSE DESCRIPTIONS

Nu 100 Humanism in Health Care.
Cat. 2. 3 hrs.
Prerequisites: none.
This course will focus on the recipient and provider of health care in a variety of settings and with particular emphasis on the hospital. The impact of inter-and intra-professional behaviors will be examined.

Nu 410 Community Health Nursing.
Cat. 1. 9 hrs.
Prerequisites: consent of Department. In-depth application of the concepts of community health, maternal-child health and psychiatric nursing to the care of individuals, families, and groups served by community health agencies; emphasis on the process of nursing assessment, family-centered care, use of community resources, and the development of therapeutic relationships with selected persons in various health service and treatment centers.

Nu 420 Introduction to Research in Nursing.
Cat. 1. 3 hrs.
Prerequisites: Consent of Department.
Techniques of the process of inquiry by the use of the scientific method of problem-solving; exploring research literature in the profession of nursing; student will identify a nursing problem which warrants further study.

Nu 430 Advanced Nursing Therapeutic Intervention.
Cat. 1. 6 hrs.
Prerequisites: Nu 410 and Nu 420.
Increases the student's competency in providing complex nursing care in critical care settings by utilizing the stress adaption concept.

Nu 440 Leadership in Nursing.
Cat. 1. 3 hrs.
Prerequisites: Nu 410, Nu 420.
Fundamental administrative theory and techniques necessary to the development of a nursing leadership role in either the institutional or community setting.

Nu 450 Nursing in Primary Care.
Cat. 1. 9 hrs.
Prerequisites: Nu 410, 420, 430, 440, 660.
Required theory and clinical practice course for Registered Nurse students. Emphasizes the contemporary role of the nurse in the community; content and clinical practice gives consideration to the function of the nurse as a patient advocate in neighborhood health centers, as coordinator of care from the institution to the home setting, assessing health needs of various communities, and participating in program development to meet assessed needs.

Nu 510 Independent study.
Cat. 1. 1-4 hrs.
Prerequisite: consent of Department.
An opportunity for the student to engage in special study in nursing according to individual needs and interests and faculty availability.

Nu 500 Research Seminar in Nursing.
Cat. 1. 5 hrs.
Prerequisites: Nu 410, 420, 430, 440.
Course provides for application of the inquiry process wherein the student is responsible for identifying and investigating a nursing problem relevant to the delivery of health care; results of this basic research endeavor will be presented in both oral and written form.

Nu 600 Clinical Nursing.
Cat. 1.3 hrs.
Prerequisites: Nu 410, 420.
Provides an opportunity for the student to have in-depth clinical experience in a clinical nursing area of his/her choice; weekly seminar provides nursing tneory relevant to the chosen clinical experience(s).

COOPERATIVE NURSING EDUCATION WITH DIPLOMA PROGRAMS

Since 1970 WSC has implemented a cooperative arrangement with Worcester hospitals maintaining diploma programs through which the college provides a one-year program of academic study. This program enables the nursing students to obtain college credit for courses in the area of arts and sciences which are required by the respective diploma programs. Hospitals participating in this cooperative program include: Worcester City Hospital, St. Vincent Hospital, Worcester Hahnemann Hospital.

Detailed information concerning these programs may be obtained by contacting the Director, School of Nursing in any of the three cooperating hospitals.

Philosophy

Associate Professor:
Robbins, Traub.

Assistant Professor:
Brophy, Schaff, Schlosser

Philosophy at Worcester State College seeks to fulfill the overall purpose of providing the philosophical vision that is essential for establishing an interdisciplinary approach to education in line with the values and goals of a liberal arts college and a liberal education, which specifically prepares for the achievement of freedom.

Its content and method have been designed to develop the mind and the character in making choices between truth and error, between right and wrong. For liberal education introduces one to the principles of things, and it is only with the reference to the principles of things that such judgments are at all possible. Because philosophy primarily seeks the understanding of first and ultimate principles it is an indispensable field of study for the attainment of a liberal education which provides the best foundation for any particular future vocational training or career specialization. Philosophy teaches one how to live and gives direction and meaning to those courses which teach one how to make a living.

While the over-all purpose of philosophical instruction is the development of a free and whole person with a civilized, critical and humane intelligence, it specifically seeks a two-fold objective: first, to acquaint the student with the major men and traditions of philosophy and the basic problems (political, social, moral and metaphysical) in the Ancient, Medieval, Modern and Contemporary periods; secondly, to introduce the student to the tools of philosophical inquiry in order to investigate their total experience, to develop their own philosophical point of view and to discover the meaning of their lives. Students may choose individual courses which will complement

their programs, or may elect to minor in this subject.

REQUIREMENTS FOR PHILOSOPHY MINOR

Ph 100 or 101, and 120, are required for the minor. A minimum of 18 credit hours and a maximum of 24 credit hours constitute the minor program. Students who wish to exceed 24 credit hours must obtain official permission. Departmental recommendations for courses beyond the above required courses should be selected in line with a balance between the historical and problematic philosophical approaches in conjunction with the students major and special interests.

COURSE DESCRIPTION

Ph 100 Logic, Knowledge and Philosophy An Introduction.
Cat. 1. 3 hrs.
Prerequisites: none.
A dialectical approach to the explication of the nature of human knowledge and reason; the various reason, for the purpose of establishing an interdisciplinary understanding of both a liberal arts currciulum and a liberal arts education; introduction to the basic forms of logical inquiry in order to formulate and evaluate logical arguments as a means of philosophical investigation in the pursuit of a balanced human existence.

Ph 101 Introduction to Philosophy.
Cat. 1. 3 hrs.
Prerequisites: none.
Nature, purpose, problems of philosophy; to challenge the student in the development of his own philosophical perspective.

Ph 120 Philosophical Psychology.
Cat. 1. 3 hrs.
Prerequisites: none.
Explores the philosophical problems relevant to human nature and the person; problems of matter, spirit, mind, body, soul, life, death, immortality, knowledge, intellect, freewill and evolution will be considered through the focus of both empirical and metaempirical methodologies; human nature in its physical and spiritual dimensions will be examined scientifically and philosophically.

Ph 200 Human Conduct and Values: Moral Philosophy.
Cat. 1. 3 hrs.
Prerequisites: Ph 100 or Ph 101.
A dialectical examination of the questions: Is life worth living? What is good? How do we judge these matters? Are there any standards? Which is more important, conscience or law? How do I resolve the problems of justice, abortion, divorce, lying, war, punishment, love, friendship and happiness?

Ph 205 Metaphysics: Being, Knowledge, and God.
Cat. 1. 3 hrs.
Prerequisites: Ph 100 or Ph 101. The study and critical evaluation of some key metaphysical systems and ideas as a preliminary to understanding the problems which pervade the search for values; both an historical and a problem centered approach will be employed in this course.

Ph 210 History of Ancient and Medieval Philosophy.
Cat. 1. 3 hrs.
Prerequisites: none.
A study of the origin and development of Greek Philosophy from its pre-philosophical beginning in myth and literature (Homer &Hesiod) through the philosophies of nature in the pre-Socraties and the metaphysics of Plato and Aristotle; the terminating of Greek thought in Plotinis provides the background for the analysis of medieval thought in Augustine, Boethius, Abelard, Bonaventure, Duns Scotus, and Aquinas; problems of being, God, Man, Knowledge, the universe will be considered as they develop out of the confrontation between the Graeco-Roman and Judeo-Christian traditions.

Ph 215 History of Modern and Contemporary Philosophy.
Cat. 1. 3 hrs.
Prerequisites: Ph 210. A study of the development of 17th and 18th century philosophy from its late medieval beginnings through its articulation in Cartesian Rationalism, British Empiricism and German Idalism, culminating in the 19th and 20th century developments in Phenomenology, Existentialism, Logical Positivism and Linguistic Analysis.

Ph 220 Existentialism. The Historic Antecedents and Contemporary Significance.
Cat. 1. 3 hrs.
Prerequisites: Ph 100 and Ph 101 or permission of Instructor.
A study of some recurring existential themes in the writings of Kierkegaard, Neitzsche, Jaspers, Heidegger, Marcel and Sartre and the impact of their ideas on contemporary philosophy, theology and literature.

Ph 225 Contemporary Analytical Philosophy.
Cat. 1. 3 hrs.
Prerequisites: Ph 100 or Ph 101 or permission of Instructor.
Examination of the philosophies of Russell, Moore, Wittgenstein, and Austin and the effect of the "analytic" movement on contemporary philosophy.

Ph 230 American Philosophy.
Cat. 1. 3 hrs.
Prerequisites: Ph 100 or Ph 101 or permission of Instructor. A survey of the major philosophical thinkers from the Civil War through the 19th and 20th centuries; emphasis given to Jonathan Edwards and the early religions traditions; Emerson, Pierce, James, Royce, Santayana, Whitehead and Dewey, Hotter, Marcuse.

Ph 235 Philosophy of Social Science.
Cat. 1. 3 hrs.
Prerequisites: none.
Theories and methods of Social Science examined in order to A) disclose the implicit premisses of Social Science models of man. B) delineate the existential ramifications of the premisses. These deliberations will be bases for discussing the question: What are (or should be) the differences between Social Science and other kinds of Science?

Ph 236 Philosophy and the Rise of Social Theory.
Cat. 1. 3 hrs.
Prerequisites: none.
The works of Social Philosophers including Hegel, Marx, Comte, and Dewey will be studied and discussed in order to help students develop a philosophical-conceptual basis for understanding modern mass movements and communism.

Ph 240 Philosophy of History.
Cat. 3. 3 hrs.
Prerequisites: none.
Examines the works of St. Augustine, Cordorcet, Hegel, Marx, Collingswood, Toynbee, Spengler and Ortega of Gassett in order to compare different answers to the question — What is the meaning of History?; may involve the search for fundamental "values" or even a "weltanschauuag"; primarily concerned with the creative aspects, relationships, and goals that emerge from the historical experience of mankind in our passage on this earth "between a sleep and a sleep".

Ph 245 Philosophy of Art: Aesthetics.
Cat. 3. 3 hrs.
Prerequisites: Ph 100 or Ph 101 or permission of Instructor.
The fundamental problems concerning art are to be examined in the light of their connection with the general philosophical questions of value, truth and cognition, basic study of the functions of the human mind, senses and emotions in the creation and appreciation of art object; topics include: the Aesthetic experience and Art as an Expression of Human Intelligence and Emotion, Art and Morality, Art and Society.

Ph 250 Philosophy of Religion.
Cat. 1. 3 hrs.
Prerequisites: Ph 100 or Ph 101 or permission of Instructor.
Mythical, natural and revealed problem of God; relationship of faith and reason, of theology and philosophy, of art and science from west to east.

Ph 251 Major Living Religions I.
Cat. 1. 3 hrs.
Prerequisites: none.
Analysis and study of he main beliefs, writings and rituals of Hinduism, Buddhism, Confucianism, Taoism and Shintoism, and the various forms they have taken in the contemporary world, East and West; related religions such as Sikkhism, Tantric Buddhism, etc., considered along with better-known forms such as Mahayan and Zen Buddhism; careful attention paid to the historical development of these religions, but the main emphasis will be on how they are organized and practiced today.

Ph 252 Major Living Religions II.
Cat. 1. 3 hrs.
Prerequisites: Ph 251.
A comparison and contrast of Judaism, Christianity and Islam in their historical and contemporary developments; e.g., reform Judaism, Hasidism, Fundamentalism, Liberalism, Vatican II Catholicism, Sufism, etc; special attention paid to what these religions offer to the world today by way of teachings, rise of passage, and social and personal ethical systems.

Ph 253 Religion East and V est.
Cat. 1. 3 hrs.
Prerequisites: none.
A comparison and contrast of Eastern and Western religious thought and practice, with special emphasis on what the West has to learn from the East and how Eastern thought can supplement Western though; consideration given to the contributions and problems that Western religious thought has brought to the East; the works of Joseph Campbell, Mircea Eliade, D.T. Suzuki, and John Dunne provides the basic themes for this course.

Ph 254 The Religious Quest for the 20th Century.
Cat. 1. 3 hrs.
Prerequisites: none.
Introduction to the study of religion by way of the religious explosion of twentieth century thought; the quest appears in various forms of theism, atheism, non-theism, and anti-theism; the quest of the humanist, the scientist, the mystic, and literary personages given special attention; various forms of searching for God through expanded consciousness also considered.

Ph 290 Philosophy of Education.
Cat. 1. 3 hrs.
Prerequisites: none.
The ontological, epistemological and axiological ideas and problems of being, knowledge and value, and their relationship to the ends and the means of education; philosophical analysis of the major presuppositions of the philosophies of education is the basis for a critique of present educacational practices and the assumptions about man, nature, society, and the universe underlying them; emphasis upon the problems and values of humanistic education, as they are expressive of the relationship of theory and practice and the ends and the means of education; selected texts and orientation will vary with Instructor.

Ph 291 Philosophy of Human Potentiality.
Cat. 1. 3 hrs.
Prerequisite: none.
The total being of each participant, in intrapersonal, interpersonal and transpersonal situations; theories and practices from the Human Potentials Movement, such as Meditation, Gestalt Therapy, Encounter Group, Existential Phenomenology, Bioenergetics, and Sensory Awakening, used to unlock the potential for growth and self-being; emphasis on personal existence.

Ph 292 Philosophy of Higher Consciousness.
Cat. 1. 3 hrs.
Prerequisites: Ph 291.
Focus on moments of higher consciousness and experiencing when the individual connects with universal meanings; readings from eastern and western, ancient and modern, psychological and metaphysical sources, emphasis on contacting and developing one's own sense of Higher Consciousness, experiential techniques used.

Ph 295 Education and Existential Philosophy.
Cat. 1. 3 hrs.
Prerequisites: none.
Theistic, atheistic and phenomenological view of existence in relation to contemporary problems of education.

Ph 300 Philosophy of Nature and Science.
Cat. 3. 3 hrs.
Prerequisites: Ph 100 or Ph 101 or permission of Instructor.
Inquiry into the concepts and methods of the empirical and natural sciences and their development as elements of human culture; analysis of the scientific-technological revolution through a study of its history; topics include – the ancient and medieval background, the logical character of empirical laws, the scientific method in the social sciences.

Ph 500 Seminar: Topics in Philosophy.
Cat. 3. 3 hrs.
Prerequisites: none.
Specific subject matter chosen by department in conjunction with student's needs and demands.

Cognate Courses
(May be taken as part of a Philosophy Minor)

In 300 Evolution of Arts and Ideas.
Cat. 3. 3. hrs.
Prerequisites: Juniors and Seniors only.

In 301 Evolution of Arts and Ideas.
Cat. 3. 3 hrs.
Prerequisites: Juniors and Seniors only.
Bringing together of ideas and concepts generally separated into specialized areas; working an understanding of "the whole'. of civilization while probing its "meaning" as expressed through various media, literature, music, mathematics, science, etc; six to ten departments represented in offering of course; students may elect either or both semester; lecture seminars and student projects required.

In 350 Independent, Multidisciplinary Study.
Cat. 1. 3 hrs.
Prerequisites: none.

In 351 Independent, Multidisciplinary Study.
Cat. 1. 3 hrs.
Prerequisites: none.
Independent, multidisciplinary study for the student; with several teachers and students, in free and open situations; projects based on student interests and oriented towards total contexts of knowledge and experience, from the social, philosophical, scientific and aesthetic realms fo meaning; teacher-student communication will be an essential part of the course.

Pe 390 The Philosophical and Human Dimensions of Sport in Society.
(See Health and Physical Science for course description).

So 304 Philosophical and Sociological Dimensions of Religion .
(See Sociology for course descriptions).

Physical Education

MEN

Associate Professor
Dyson, Meckler

Assistant Professor
Girouard

WOMEN

Associate Professor:
Nugent

Assistant Professor
Demars, Devlin, Duquette, Semerjian

The Physical Education program offers students an opportunity to participate in a wide variety of individual and team activities. This program is designed to develop a satisfying level of skill, fitness and comprehensive knowledge of rules and strategy which will meet the immediate and life long recreational needs of the student.

The departments also seek to create an awareness of the necessity to adjust one's lifestyle to accommodate a concern for physical as well as intellectual well being. The department's objectives are: 1) An understanding of one's basic need to be active for optimum health; 2) An understanding of the development and maintenance of physical capacities through exercise, skills, sports and dance; 3) An opportunity for social interaction through group, team and coeducational activities; 4) An opportunity to develop supplemental preparation in the area of physical education and/or Coaching.

Three credits are required for graduation. A student may elect to receive a pass-fail grade rather than a letter grade by informing the Registrar. A three credit health or physical education elective course may be substituted for the activity courses. Veterans are exempt from this requirement.

The departments offer an opportunity for interested students to minor in physical education or coaching. The minor is co-educational and is in keeping with the trend toward directed leisure time activity in the modern world. Eighteen semester hours of approved courses are required.

COURSES APPROPRIATE FOR A PHYSICAL EDUCATION MINOR

Pe 120 Creative Movement and Interrelated Arts
Pe 155 Advanced Life Saving
Pe 160 Water Safety Instructor
Pe 200 Physical Education in the Elementary School
Pe 210 Movement Education
Pe 220 Dance in Education
Pe 225 Adapted Aquatics (Teaching of Swimming for handicapped)
Pe 230 Gymnastics in Education
Pe 240 Physical Education/Recreation for Special Populations
Pe 260 First Aid: Advanced Theory Skill
Pe 261 Standard First Aid and C.P.R.
Pe 300 Principles of Coaching
Pe 340 Intramural Athletics
Pe 370 Recreational Programs
Pe 380 Mechanical Analysis of Motor Activities
Pe 390 Sport and Soceity
Pe 500 Independent Study in Physical Education

COURSES APPROPRIATE FOR A COACHING MINOR

Pe 260 First Aid: Advanced Theory and Practice
Pe 261 Standard First Aid and C.P.R.
Pe 300 Principles of Coaching
Pe 310 Coaching Team Sports for Men
Pe 320 Coaching Team Sports for Women
321 Part I, Part II
Pe 330 Coaching of Tennis
Pe 331 Coaching of Swimming
Pe 332 Coaching of Track and Field
Pe 333 Coaching of Golf
Pe 340 Intramural Athletics
Pe 350 Fundamentals of Athletic Training
Pe 360 Techniques of Officiating Volleyball
Pe 361 Techniques of Officiating Women's Basketball
Pe 370 Recreational Programs
Pe 375 Athletic Programs

Pe 380 Mechanical Analysis of Motor Activities
Pe 390 Sport & Society
Pe 500 Independent Study in Coaching
Pe 600 Field Experiences in Coaching

Other Courses Possible

Human Anatomy and Physiology I & II is applicable towards a minor only if the courses are not taken to fulfill other college requirements. It is strongly recommended that the two courses be taken by students contemplating graduate work in Health or Physical Education.

Students who have complete the 3 credit requirements may use any of the activity courses towards a concentration or minor.

Men's Departmental Courses

Swimming
Flag Football
Advanced Flag Football
Soccer
Basketball
Advanced Basketball
Volleyball
Softball
Badminton
Candlepin Bowling
Ten Pin Bowling
Golf
Gymnastics
Tennis
Senior Life Saving
Team Handball
Floor Hockey
Weight Training

Women's Departmental Courses

Archery
Badminton
Basketball
Bowling
Cycling
Dance: Ballroom, Creative, Folk, Square, Tap.
Elementary
School Activities
Fencing
Field Hockey
Flag Football
Golf
Gymnastics
Hiking
Independent Study
Jogging and Fitness
Lacrosse
Sailing
Softball
Swimming
Instructional, Recreational Fitness
Tennis
Track & Field
Volleyball
Yoga

SPORTS MEDICINE MINOR

Sports Medicine deals with those areas of knowledge and practice concerned with the athlete; the physiological, sociological and psychological aspects of sport.

The Program has been designed to include the study of physical fitness, nutrition, limitations of performance, immediate management of injuries, prevention, rehabilitation and adapted programs.

The curriculum shall include a minimum of 18 credit hours taken from the approved courses. One of two options may be followed:

Option I —— General approach to Sports Medicine

Option II —— Sports Medicine for Athletic Training

Required Courses

Bl 381 Exercise Physiology
Pe 260 First Aid: Advanced Theory and Skills
Pe 450 Health and Fitness in Sport
*Pe 355 Techniques of Athletic Training
*Pe 550 Laboratory Practicum
* for Option II

Optional Courses

Pe 300 Psychology of Coaching
Pe 190 Sport and Society
Bl 420 Environmental or Stress Physiology
Bi 261 Basic Kinesiology
Pe 225 Adapted Aquatics

COURSE DESCRIPTIONS

Pe 120 Creative Movement and Interrelated Arts.
Cat. 2. 3 hrs.
Prerequisites: none.
Student creativity in all the arts - emphasizing integration through movement and using an elemental approach; movement will be interrelated with music, language arts and visual arts through individual and group experiences in the creative process; elemental themes will focus on-line, space, time, form, color, thythm, sound and flow.

Pe 155 Advanced Life, Saving.
Cat. 3. 2 hrs.
Prerequisites: none.
Knowledge and skills designed to save an individual's own life or the life of another in the event of an emergency. Sufficient time for practice of life - saving in all its forms to improve aquatic ability and versatility will be provided.
American Red Cross Advanced Life - saving certificate may be issued upon successful completion of the course.

Pe 160 Water Safety Instructor.
Cat. 3. 2 hrs.
Prerequisites: Current ARC Advanced Life Saving certificate.
Detailed analysis of swimming strokes, lifesaving techniques and aquatic skills and the opportunity to perfect one's own strokes and aquatic skills. Knowledge of teaching progressions and techniques used in teaching swimming to beginners through advanced swimmers including advanced life - saving. Practical experience teaching Red Cross instructional swimming classes to be provided. American Red Cross Water Safety Instructor certificate to be issued to those successfully completing the course.

Pe 190 Sport and Society.
Cat. 2. 3 hrs.
Prerequisites: none.
Analysis of the nature of human competition and its relation to athletic competition arriving at a proper understanding of the place of sports in a cooperative, moral and humane society; philosophical, psychological and sociological functions of human nature and action related to an analysis of physical health and excellence in individual and team sports; meaning of "game" will be viewed in conjunction.

Pe 200 Physical Education in the Elementary School.
Cat. 2. 3. hrs.
Prerequisites: none.
Meaning and purpose of physical education; physical, social, emotional and intellectual characteristics of children in relation to motor learning; methods and techniques of physical education; planning and evaluating the program; activity areas include physical fitness, games, classroom activities, dance and relaxation for children.

Pe 210 Movement Education.
Cat. 1. 3 hrs.
Prerequisites: none.
Creative individualized approach to teaching physical eduation; incorporating the natural inclinations of children by using the whole body in company with the mind and imagination; selected activities that foster and develop the concepts of elements of moevement, i.e., body awareness, space and qualities of movement.

Pe 220 Dance in Education.
Cat. 3. 3 hrs.
Prerequisites: none.
Course content includes methods and materials in teaching fundamental movement, rhythms, singing games, creative dance, folk dance, square dance and social dance in grades K - 12. Learning will be experiential and opportunity for practical application will be provided.

Pe 225 Adapted Aquatics.(Formally Teaching of Swimming for Handicapped).
Cat. 3. 2 hrs.
Prerequisites: Water Safety Instructor certification or permission of the insdtructor.

The disabled; a basic knowledge of various disabilities their systems and characteristics and their effect in aquatic activities. Knowledge of different teaching methods and their practical application in aquatic activity programs. Practical experience in teaching the disabled will be required. Candidates may qualify for American Red Cross Certification Instructor of Adapted Aquaties upon successful completion of the course.

Pe 230 Gymnastics in Education.
Cat. 2. 2 hrs.
Prerequisites: none.
Introduction to the broad slope of gymnastic activities taught at the elementary and secondary school level. Included are the concepts of force and motion, skills progression, organization and methods, safety practices, and the application of these knowledges by the student's teaching of tumbling, floor exercise, and apparatus activities.

Pe 240 Physical Education/Recreation For Special Populations.
Cat. 2. 3 hrs.
Prerequisites: Pe 210, Pe 200, or consent of Department.
Theory, observation, and individual experiences assisting physical educators, physical therapists and/or occupational and recreational therapists working with exceptional people; focus on the special movement-related needs, interests and abilities of various types of physical, mental, and emotional handicaps.

Pe 260 First Aid: Advanced Theory and Skill.
Cat. 2. 3 hrs.
Prerequisites: consent of Instructor.
Includes the standard Red Cross course in First Aid and an opportunity for an instructor's rating in teaching First Aid. The subjects in the standard course are covered more intensively. Emergency birth procedures and cardiopulmonary resuscitation are two areas covered which are beyond the scope of the standard course.

Pe 261 First Aid and C.P.R.
Cat. 1. 1 Hr.
Prerequisite: none.
Standard Red Cross theory and skills of emergency treqtment for poisoning, shock, wounds, artificial respiration, and broken bones; accident prevention is main objective of the course.

Pe 300 Principles of Coaching.
Cat. 2. 3 hrs.
Prerequisites: none.
The understanding and skills necessary for a person to coach children in any sport; the values of a coach must teach, the relationships the coach must establish between himself and the school; the team, the individual player, the opposing teams and the community will be analyzed.

Pe 310 Coaching Team Sports for Men.
Cat. 2. 3. hrs.
Prerequisites: none.
The techniques and strategies of coaching football, basketball and baseball; each sport analyzed in terms of selection of team, conditioning, offensive and defensive patterns and the handling of the team in game situations.

Pe 500 Independent Study in Physical Education/Coaching.
Cat. 1. 1-3 hrs.
Prerequisites: consent of Department. A course concept offering the student an opportunity to engage in an area of interest of physical education not covered in regular elective course offerings; furthering the pursuit for an in-depth study of an area of special interest and concern.

Pe 550 Sports Medicine - Laboratory Practicum.
Cat. 2. 3. hrs.
Prerequisites:
Bi-161-2 Pe 260-1, Pe 450 and Pe 355.
Students will work under the supervision of a trainer in a school, and gain the practical experience and training in this field.

Pe 600 Field Experiences in Physical Education/Coaching.
Cat. 1. 2 hrs.
Prerequisite: Consent of Department.
A fifty hour directed experience in organizing and executing either physical education programs at the elementary level or extracurricular programs at any level; an on-campus coordinating seminar will be required.

Psychology

Professor:
Lonergan, Shea, Taylor

Associate Professor:
Allard

Assistant Professor:
Daly, Guarini, Jones, Matheson, Nash, O'Connor, Widmayer

The undergraduate offerings in psychology are designed to acquaint the student with basic theories, principles and laws of human behavior. The undergraduate program emphasizes the material that is foundational to all psychology, and offers the student an educational background for the wide variety of vocational opportunities.

Students enrolled for the major in psychology begin with a core of courses which serve as a foundation for later course work in content areas such as developmental psychology, social psychology, psychology of learning, group dynamics, and abnormal psychology. This program is supplemented with course work in the humanities, biological sciences, social sciences, physical sciences and mathematics.

The Psychology major is designed to provide a broad background in Psychology while allowing the student to pursue individual interests to as great a degree as possible. Majors in Psychology must successfully complete the five core courses: General Psychology I and II, History and Systems, Psychological Statistics, and Psychological Methods. Additionally they must select a minimum of five elective Psychology courses (15 credit hours) in consultation with their advisors. It is strongly recommended that Psychology majors take a wide range of electives in Humanities, Arts and Natural Sciences. Particularly recommended are courses in Philosophy, English, History, Human Anatomy and Physiology, and a foreign language. Students should attempt to meet distribution requirements during freshman and sophomore years.

For students who interests lie in certain specific areas of Psychology the Department has developed four Career Concentrations. These consist of programs of recommended electives designed to prepare a student for graduate school in a specialized field of Psychology. In some cases the programs will also prepare the student for entry level jobs. However, professional positions in Psychology almost always require graduate degrees for advancement.
Students interested in Psychology careers should therefore, insure that their general program is acceptable to graduate school by maintinaing an over-all Q.P.A. of at least 2.5 and a Psychology Q.P.A. of 3.0. It is recommended that at least two years of a foreign language be taken, as well as an advanced course in composition or technical writing and at least one course in Computer Science to provide necessary tool skills.

It is important that the student work closely with his/her advisor in the selection of courses. The advisor will also have further information on the four Career Concentrations:

I. Education and School Psychology
II. Social Service
III. Clinical and Counseling Psychology
IV. Management and Industrial Psychology

Students planning to continue for graduate study should select their undergraduate course work carefully with their Advisor to assure meeting prerequisites for advanced study.

PSYCHOLOGY MAJOR REQUIREMENTS

Majors in Psychology must successfully complete the Five Core Courses: General Psychology I and II, History and Systems, Psychological Statistics, and Psychological Methods. The Psychology Department suggests that General Psychology I and II be taken freshman year. History and Systems in the Sophomore year, and Psychological Statistics and Methods in the junior or senior years while the core requirements are being completed, elective psychology course can be taken to make up the re-

mainder of the student's program. A total 30 semester hours in psychology is required and a maximum of 48 credit hours is allowed. A minimum Q.P.A. of 2.0 in psychology is required for graduation.

RECOMMENDED PROGRAM FOR PSYCHOLOGY MINORS

General Psychology I & II followed by 4 psychology electives.

COURSE DESCRIPTIONS

Ps 110 General Psychology I.
Cat. 1. 3 hrs.
Prerequisites: none.
Psychology as a behavioral science; consideration of such topics as history, scientific method, brain and nervous system, maturation, development, learning, motivation and perception.

Ps 111 General Psychology II.
Cat. 1. 3 hrs.
Prerequisites: none.
Psychology as a behavioral science; consideration of such topics as personality, behavioral science; consideration of such topics as personality, behavior disorders, therapy, thinking, social behavior and vocations in psychology.

Ps 115 Psychology of Marriage.
Cat. 3. 3 hrs.
Prerequisites: Ps 111.
The psychology of basic needs and motives of individuals intending to marry are examined; psychological problems of courtships, mate selection, marital and parental roles as well as problems of contemporary family life are explored and analyzed.

Ps 116 Psychology of Human Sexuality.
Cat. 3. 3 hrs.
Prerequisites: Ps 110 and permission of Instructor.
Consideration of the wide range of human sexuality and sexual behavior including; self acceptance and self image, sexual development, sex role, social attitudes, sexual attraction and awareness, and various forms of sexual interaction — emphasis on developing insight into sexuality as a foundation of personality and sexual interaction as a human communication.

Ps 120 Child Psychology.
Cat. 3. 2 hrs.
Prerequisites: Ps 110.
The mental, emotional, social and physical developments from conception to early adolescence; critical and technical review of research and theories.

Ps 140 Psychology of Adjustment.
Cat. 3. 3 hrs.
Prerequisites: Ps 110.
Development of health and personality of the student, the family and the teacher; contributions of constitutional and environmental factors to adjustive behavior and the establishment of values as applied to teaching and life; techniques for appraising the degree of adjustment; observation and field trips to social agencies and institutions are arranged.

Ps 172 Psychology of Adolescence.
Cat. 1. 3 hrs.
Prerequisite: Ps 110.
The mental, emotional, social and physical changes of the adolescent; special emphasis on peer group and school influences on development and the contemporary problems of adolescence.

Ps 190 Child Growth and Development.
Cat. 1. 3 hrs.
Prerequisite: Ps 110.
The human organism from conception through adolescence; sequential patterns and characteristics of personality development vis-a-vis physcial growth; required of elementary education majors.

Ps 210 Sensation and Perception.
Cat. 3. 3 hrs.
Prerequisites: Ps 110.
Problems and methods in the study of selected sensory and perceptual processes; contemporary theory and research.

Ps 213 History and Systems of Psychology.
Cat. 1. 3 hrs.
Prerequisites: Ps 110, Ps 111.
Historical and systematic analysis of psychological thought and points of view; schools or stystems of psychology, such as structuralism, functionalism, behaviorism, hormic, psychoanalytic and Gestalt psychology.

Ps 220 Motivation.
Cat. 3. 3 hrs.
Prerequisites: Ps 110, recommended.
Primary and learned motivation, conditions that arouse, sustain and direct behavior; topics include frustration, conflict, stress, instinct, motives, biological and acquired basis of emotions.

Ps 230 Physiological Psychology.
Cat. 3. 3 hrs.
Prerequisites: Ps 110, Ps 111.
Psychobiological problems; current physiological research in the fields of emotion, motivation and learning; extensions of physiological methods into other psychological areas.

Ps 240 Abnormal Psychology.
Cat. 1. 3 hrs.
Prerequisites: Ps 111.
The etiology, dynamics and treatment of psychopathology and its relationship to normal personality; contemporary approaches as well as traditional categories of psychopathology.

Ps 250 Social Psychology.
Cat. 1. 3 hrs.
Prerequisites: Ps 111.
The individual in social situations: emphasis on person perception, interpersonal relations including non-verbal communications, group dynamics and attitudes for and change.

Ps 280 Psychology of Learning.
Cat. 1. 3 hrs.
Prerequisites: Ps 110.
Principles and theories of learning; emphasis on experimental findings and the position of learning in general theories of behavior.

Ps 300 Psychological Statistics.
Cat. 1. 3 hrs.
Prerequisites: Junior or senior status or permission of instructor.
Statistical principles and techniques as applied to psychological data; the selection of procedures appropriate to the problems, interpretation of outcomes, data tabulation and reduction, measurement of central tendency and variability, correlation, prediction and association.

Ps 305 Group Dynamics.
Cat. 3. 3 hrs.
Prerequisites: Ps 110.
Designed to introduce the general principles of group dynamics, theoretically and emphatically. A systematic presentation of those aspects of group behavior which have come to compose the central subject matter of group dynamics namely group learning, group problem solving and group leadership.

Ps 314 Psychological Methods.
Cat. 1. 3 hrs.
Prerequisites: Ps 300, Junior or Senior year status or permission of Instructor.
Questions about behavior are formulated and then tested through experiments; lectures and laboratory experiences, used to expose psychology majors to the procedures of designing, conducting, and reporting experiments.

Ps 320 Psychology of Subnormal and Unadjusted Children.
Cat. 2. 3 hrs.
Prerequisites: Ps 110, Ps 111.
The psychology and treatment of children having superior or inferior intellectural ability, defective vision, hearing, speech and physical handicaps; the mental equipment of individual children, different degrees of retardation and their causes, and disorders of behavior which frequently are concommitant; the psychological bases of suitable curriculum for mentally retarded children evaluated.

Ps 340 Psychology of the Culturally Deprived.
Cat. 1. 3 hrs.
Prerequisites: Ps 110, Ps 111.
Detection of the culturally deprived child in their regular classroom, what his need are and how they may be met; a practical approach developed for adjusting instructions to the individual pupil; a study of the visual and manipulative devices that can be used to the advantage of the culturally deprived; special stress placed on appropriate methods and materials.

Ps 350 Introduction to Psychometrics.
Cat. 1. 3 hrs.
Prerequisites: Ps 110, Ps 111.
Instruments and methods employed in the evaluation of the psychological factors of human beings; current instruments designed to measure intelligence, aptitude, interest and personality.

Ps 360 Psychology of Aging.
Cat. 1. 3 hrs.
Prerequisites: Ps 110.
This course applies the developmental approach as a systematic framework for viewing the adult years. Several developmental theories will be considered. While the middle age and old age periods of life will receive major emphasis, a brief review of earlier stages of life will be included to aid in understanding the origins of later life developments.

Ps 380 Theories of Personality.
Cat. 1. 3 hrs.
Prerequisites: Ps 110, Ps 111.
Comprehensive treatment of major personality theories, emphasis on the great controversies, biographies of outstanding personality theorists, psychological schools and systematic theories.

Ps 390 Industrial Psychology.
Cat. 2. 3 hrs.
Prerequisites: Ps 110.
Open to psychology majors and other students who are interested in furthering their knowledge of the work of the psychologist in business and industry. Areas of concentration will include: the industrial selection process; vocational career assessment; techniques of interviewing; performance reviews and selected special problems in career education and organizational development in selected industries.

Ps 400 Encounter Theory and Practice.
Cat. 1. 3 hrs.
Prerequisites: Ps 110, Ps 111 and consent of Instructor.
Basic investigation through literature and practice of the Group Encounter experience; major emphasis on the participation in self-awareness and encountering experiences and the analysis of such experiences as an educational process.

Ps 410 Introduction to the Study of Exceptional Children.
Cat. 3. 3 hrs.
Prerequisites: Ps 110, Ps 111.
Etiology, classification, and problems of children who have physical disability, mental retardation, emotional or social difficulties, giftedness; the home, school and community are considered in relation to the child's mental health.

Ps 420 Clinical Psychology.
Cat. 3. 3 hrs.
Prerequisites: Ps 110, Ps 111.
Various approaches to the treatment of emotional disorders; the psychoanalytic approach, the behavior modification approach, and the client-centered approach; case studies will be presented and discussed in relation to the various approaches.

Ps 430 Advanced Experimental Psychology.
Cat. 3. 3 hrs.
Prerequisites: Ps 110, Ps 111, Ps 200.
Laboratory procedures and techniques for studying behavior; data, theories and methods of investigation; selected projects carried out by members of the class.

Ps 450 Existential Humanistic Psychology.
Cat. 1. 3 hrs.
Prerequisites: Ps 110, Ps 111, and permission of Instructor.
Humanistic view of psychology which emphasized the existential phenomological approach of human behavior; personality and psychotherapy.

Ps 500 Independent Study in Psychology.
Cat. 3. 1-3 hrs.
Prerequisites: Ps 110, Ps 111, Ps 113, Ps 114, Ps 200 and consent of Instructor.
The student will pursue an area of special interest through research or field work experience under close supervision of a faculty member.

Ps 510 Special Topics in Psychology.
Cat. 1. 3 hrs.
Prerequisites: Ps 110, Ps 111, and Departmental approval.
Each topic is a course in a selected area of Psychology of mutual interest to instructor and students; topic and prerequisites to be announced in advance; student may take Ps 510 more than once for credit as long as different topics are being considered.

Ps 520 Individual & Group Psychotherapy.
Cat. 3. 3 hrs.
Prerequisites: Ps 110, Ps 111, Ps 180, Ps 300, Ps 420.
A study of leading theoretical and ecclectic approaches to individual and group psychotherapy; qualifications and personal qualities of the therapist.

Ps 530 Seminar in Developmental Psychology.
Cat. 3. 3 hrs.
Prerequisites: Ps 110, Ps 111, Ps 190, Ps 171.
An advanced course dealing with developmental patterns and the continuities and discontinuities of physical, mental, and emotional development throughout the life span; consideration will be given to various theoretical approaches and research techniques as well as the study of current research findings; the entire course will emphasize independent work and the opportunity for personal observation and research.

Secondary Education

Professor:
Zax

Associate Professor:
Farrey, Hilton, Masterson

Assistant Professor:
Burke, Osborne, Peterson, Zegarra

The basic intent of a minor in secondary education is to have students become properly prepared and qualified for certification as teachers in secondary schools. Toward accomplishing that goal, the Secondary Education Department offers students a Certification Program in Secondary Education. By completing this program a student will have met the requirements of a Secondary Education minor and certification in Massachusetts. Students majoring in subject areas of departments whose programs have been approved by the Interstate Certification Compact Program will also have met the requirements for certification in thirty other states.

CERTIFICATION PROGRAM IN SECONDARY EDUCATION

A total of twenty-four credits is required to complete this program, which is comprised of the following parts:

AREA I: FOUNDATIONS — One of the following three courses are required: Educational Psychology; History and Philosophy of Education; Adolescent Psychology. Additional free electives in Foundations are: Education of the Self; Educational Measurement and Evaluation; Independent Study.

AREA II: CURRICULUM AND INSTRUCTION — Following two courses are required: Methods and Skills in (Subject Area); Principles and Curriculum of Secondary Education. Teaching of Reading in Secondary Schools is required of English majors. One of the following six electives in Area II are required: Teaching of Reading in Secondary Schools; Evaluation of Classroom Learning; Educational Measurement and Evaluation; Teaching for

Creativity; Diagnostic and Remedial Reading in Secondary Schools; Individualized Instruction in Secondary Schools. Free electives are: Preparation of Inexpensive Instructional Materials and Media, Independent Study.

AREA III: ISSUES AND ORIENTATION TO TOTAL SCHOOL PROGRAM – The required course, Principles and Curriculum of Secondary Education, covers many objectives implicit in this area. Free electives are: Introduction to Secondary Education; Alternatives to Traditional Education; Public School Administration; Principles of Guidance; Seminar in Secondary Education; Urban Education; Education and Race Relation; Comparative Education; Independent Study.

AREA IV: FIELD EXPERIENCE – (limited to courses in which a majority of the course is practicum). Required: Student Teaching. Additional Student Teaching to make 9 to 12 credits available as elective: Note: Credits beyond 6 for Student Teaching will not count toward Secondary Education minor. Additional free electives are: Exploring Secondary Schools; Social Action Education Practicum; Independent Study.

RECOMMENDED PROGRAM FOR SECONDARY EDUCATION MINORS (B.A./B.S.)

Secondary education electives may generally be taken in any semester of any year if prerequisites are met. However, the student is cautioned to plan the first semester of his/her Senior year carefully. He or she must elect a minimum of two courses from those offered on half-semester basis to complement the half-semester of student teaching, or make some other arrangement which is approved by the department chairman.

SOPHOMORES

Fall Semester

Spring Semester

Introduction to Secondary Education (Area III)

JUNIOR

Fall Semester

Exploring Secondary Schools (Area IV)
One Secondary Education elective

Spring Semester

Principles & Curriculum of Secondary Education (Area II)
Teaching Methods & Skills (in content Major) (Area II)
*Teaching of Reading in the Secondary Schools
One Secondary Education elective

SENIORS

Fall Semester

Student Teaching (Area IV)
Secondary Education requirement in Foundations (Area I)
One or two Secondary Education electives

Spring Semester

Seminar in Secondary Education (Area III)
*Teaching of Reading in the Secondary Schools

*Teaching of Reading in the Secondary Schools (required for English majors, available to all students) recommended to be taken in either two semesters indicated (Area II)

COURSE DESCRIPTIONS

Ed 170 Introduction to Modern Education. Cat. 2. 3 hrs.

Prerequisites: none.
Not for the education major or minor; designed to acquaint and inform the citizen, taxpayer, and prospective parent about education in today's society; all levels of education studied from pre-school through adult education; contemporary problems at the local, state, and national levels will be overviewed; additional information will be provided for the student who may be contemplating education as a major or minor but is not sure of himself or of the field to make a choice or commitment.

Ed 240 Introduction to Secondary Education.
Cat. 1. 3 hrs.
Prerequisites: Open to Freshmen and Sophomores only.
Experience in schools, observation, participation in junior-senior high school; investigation of alternative, free, innovative schools; seminar style class meetings.

Ed 245 Exploring Secondary Schools.
Cat. 1. 3 hrs.
Prerequisites: Sophomore and Juniors only.
A seminar and practicum in secondary education designed to provide a gradual entry to teaching; trains students in tutoring skills, small group instruction skills and human relations and self awareness; practicum gives the student the chance to exercise the skills in a public school; tasks they perform — working with individual students, working with small groups.

Ed 280 Education of the Self.
Cat. 3. 3 hrs.
Prerequisites: none.
Increasing one's awareness and skills in areas of personal growth and interpersonal effectiveness; and introspective writing; areas include ways to understand and increase — trust, self-disclosure, verbal and non-verbal communication, expressing feelings, goal setting/achievement, friendship and family relations, conflict resolution; no prior education courses are necessary.

Ed 281 Alternatives to Traditional Education.
Cat. 1. 3 hrs.
Prerequisites: none.
Goals, key concepts, characteristics of alternative schooling; range of alternatives to traditional public schooling inside and outside of schools available to students now and in the future; includes visits to alternatives in Worcester and elsewhere when feasible.

Ed 288 Evaluation of Classrooom Learning.
Cat. 1. 3 hrs.
Prerequisites: none.
Focus on techniques of classroom evaluation, including stating objectives, devising learning contracts, observation techniques, and classroom test construction.

Ed 349 Education of the Gifted.
Cat. 1. 3 hrs.
Prerequisites: Ps 190, or Ps 171; open to Junior and Senior education majors and minors.
Identification, characteristics and personality factors of the gifted; the teacher's role and various organizational patterns; innovative procedures and techniques to nurture creativity.

Ed 370 Educational Psychology (Full Semester).
Cat. 1. 3 hrs.
Prerequisites: General Psychology I.
Learning and developmental processes, motivation, retention, relationships of intelligence and achievement, personality, emotional aspects of learning.

Ed 371 History and Philosophy of Education (Full semester).
Cat. 1. 3 hrs.
Prerequisite: None.
Contemporary problems of education in relation to selected ancient, medieval, modern philosophers of education.

Ed 372 Educational Measurement and Evaluation.
Cat. 1. 3 hrs.
Prerqusities: None.
Behavioral objectives, test construction, techniques of student evaluation and grading, standardized testing, statistics; current issues in measurement.

Ed 373 Urban Education.
Cat. 1. 3 hrs.
Prerequisite: Open to upperclassmen, or consent of Instructor.
Development of understanding of the social, psychological and education problems of the culturally different; strategies and techniques for teaching in the inner-city; practicum.

Ed 374 Education and Race Relations.
Cat. 1. 3 hrs.
Prerequisites: Hi 111 and Hi 112 and consent of Instructor.
Education in the promotion of interracial understanding; study of Black American and American Indian; contribution to social intellectual history and contemporary affairs; appreciation and contributions of the culturally different.

Ed 375 Principles and Curriculum of Secondary Education.
Cat. 1. 3 hrs.
Prerequisites: Open to Juniors and Senior; prerequisite for student teaching; required for secondary education minors.
Goals, curriculum, management, school organization; pupil personnel, teaching techniques, contemporary issues.

Ed 376 Teaching of Reading in the Secondary Schools.
Cat. 1. 3 hrs.
Prerequisite: Open only to Juniors and Seniors; required of all English majors minoring in secondary education.
Fundamentals of developmental and corrective reading at secondary school level; reading and study skills in content subjects.

Ed 377 Teaching Methods and Skills in Biology.
Cat. 1. 3 hrs.
Prerequisite: Required of secondary education minors majoring in biology; limited to Juniors; prerequisites for student teaching. Philosophy, theory, and practice of biological science teaching in the secondary school; opportunity to develop both theoretical insight and practical knowledge and skills required in teaching of biology.

Ed 378 Teaching Methods and Skills in English.
Cat. 1. 3 hrs.
Prerequisites: Required of secondary education minors majoring in English; limited to Juniros; prerequisite for student teaching.
Small group discussion, improvisation, writing workshop, and more traditional methods for developing students' speaking, listening, writing, reading, and thinking skills; ideas for student-centered assignments based on psychological development and individual experience.

Ed 379 Teaching Methods and Skills in French.
Cat. 1. 3 hrs.
Prerequisites: Required of secondary education minors majoring in French; limited to Juniors; prerequisite for student teaching.
History of modern language education in the United States; current methods of teaching French to include audio-lingual and cognitive approaches; consideration of unit instruction, textbooks and tests; observation of secondary school French classes.

Ed 380 Teaching Methods and Skills in Geography.
Cat. 1. 3 hrs.
Prerequisite: Required of secondary education minors majoring in geography; limited to Juniors; prerequisites for student teaching.
Develop knowledge and skills for effective teaching of geography at the secondary school level; utilization of teaching aids, materials and community resources; participation in planning, developing, and presentation of micro-lesson in teaching geography.

Ed 381 Teaching Methods & Skills in Health Education.
Cat. 1. 3 hrs.
Prerequisites: He 100.
For those interested in teaching health at the elementary secondary level; focus on the role and responsibilities of the classroom teacher as a major force in the creative teaching-learning environment.

Ed 382 Teaching Methods and Skills in History.
Cat. 1. 3 hrs.
Prerequisite: Required of secondary education minors majoring in history; limited to Juniors prerequisite for student teaching.
Develop knowledge and skills for effective teaching of history; special emphasis placed on inquiry approach to teaching history; demonstration classes and micro-teaching experiences develop full perspective in this area.

Ed 383 Teaching Methods and Skills in Mathematics.
Cat. 1. 3 hrs.
Prerequisite: Required of secondary education minors majoring in mathematics; limited to Juniors; prerequisite for student teaching.
Teaching of junior, senior high school mathematics concepts; observations, reports of demonstration classes, tutoring, micro-teaching; aids, lesson plans, reading skills in mathematics teaching.

Ed 384 Teaching Methods and Skills in Physical Sciences.
Cat. 1. 3 hrs.
Prerequisite: Required of secondary education minors majoring in physical sciences; limited to Juniors; prerequisite for student teaching.
Instruction in secondary school physical science teaching; overview organization and presentation of subject matter, equipment and techniques; trends of science in secondary schools.

Ed 385 Teaching Methods and Skills in Social Studies.
Cat. 1. 3 hrs.
Prerequisite: Required of secondary education minors majoring in economics, psychology, sociology; prerequisite for student teaching.
Development of teaching skills based on Hunt and Metcalf's reflective method; theory and practice of teaching concepts, generalizations and values in economics, psychology, and sociology.

Ed 386 Teaching Methods and Skills in Spanish.
Cat. 1. 3 hrs.
Prerequisite: Required of secondary education minors majoring in Spanish; limited to Juniors; prerequisite for student teaching.
History of modern language education in the United States; current methods of teaching Spanish to include audio-lingual and cognitive approaches; consideration of units in linguistics and cultural material; observation of secondary school Spanish classes, English as a second language, and bi-lingual programs.

Ed 471 Principles of Guidance
Cat. 1. 3 hrs.
Prerequisites: Juniors and Seniors only; open only to secondary education minors.
Considers role of guidance and counseling in the school; teacher's responsibilities as a functioning member of the guidance staff.

Ed 472 Teaching for Creativity.
Cat. 1. 3 hrs.
Prerequisite: None.
Deals with varying definitions of creativity and current measures of this construct; emphasis on student projects presented to class as simulated learning experiences; prospective teacher given practice in techniques, i.e., brainstorming, role playing, etc., useful in creative learning experiences.

Ed 475 Comparative Education.
Cat. 3. 3 hrs.

Prerequisite: Methods and Skills, Principles and Curriculum of Secondary Education.
A seminar course involving students in an examination of other education systems and a field study; students develop a model for the field study which is a 2-3 week trip to countries chosen for comparison by students; focus on differing organization and methods of education in several foreign countries at the student's expense.

Ed 476 Individualized Instruction in the Secondary Schools.
Cat. 1. 3 hrs.
Prerequisite: Juniors and Seniors.
Examines ways in which teachers may individualize instruction in the Secondary School.

Ed 480 Diagnostic and Remedial Techniques in Secondary Reading.
Cat. 1. 3 hrs.
Prerequisites: Ed 320, only to Seniors.
Symptoms and causes of reading disabilities, formal and informal reading tests; remedial principles and techniques; students may work with pupils at Junior, Senior high school level with reading difficulties.

Ed 575 Independent Study in Education.
Cat. 1. 1-3 hrs.
Prerequisites: Open only to Seniors with secondary education minor.

Execute an original project or research study under contract with faculty member of Secondary Education Dept.

Ed 580 Seminar in Secondary Education.
Cat. 1. 3 hrs.
Prerequisites: Ed 300 and 400, 401.
Analysis and evaluation of teaching experience; job market and graduate school possibilities.

Ed 670 Social Action Education Practicum
Cat. 1. 3 hrs.
Prerequisite: Upperclassmen.

Work study program designed to provide students with an opportunity to work in different social and educational agencies under supervision.

Ed 675 Student Teaching in Secondary Schools.
Cat. 1. 6 hrs.
Prerequisites: Ed 300; course in teaching Methods and Skills (in content major); open only to Seniors during first semester on quarter basis.
Teaching in secondary schools under supervision of cooperating teachers and college supervisors.

Sociology

Professor:
Goss, Khleif

Assistant Professor:
Brooker, Pizziferri, Zeadey, Zelman

The sociology curriculum is designed to give all students a aproper frame of reference for social participation and social evaluation. It is also explicitly intended to be a basic program for those persons who seek to make the field of sociology their life's work. It is an open-ended program designed to meet the needs of students in contemporary society.

SOCIOLOGY MAJOR REQUIREMENTS

Thirty semester hours in sociology are required including the following courses: Introductory Sociology, Social Science Research Methods (must be included within the first fifteen hours of Sociology), Social Theory I (to be taken after twelve semester hours), and an ancilliary course in logic to be taken in Freshman or Sophomore year (offered by the Philosophy Department).

The remainder of the student's program is chosen with the advice and consent of his Faculty advisor. Only six credit hours are accepted at the 100 level. A minimum of nine credit hours are required at the 300 level. A maximum of 6 hours in Sociology courses may be taken in any given semester (the department reserves the right to make exceptions when necessary).

The department also reserves the right to recommend the withdrawal of any student from the Sociology major whose performance in Sociology is consistently of low quality. Specific department policy is posted in the Department's office (A 104B).

Notes

1. The only D acceptable toward the major would be in So 100.
2. Sociology majors must maintain:

a. A departmental OPA of 2.3 for sophomore year and thereafter.
b. A college QPA of 2.0 for sophomore year and thereafter.

3. Transfers into department must maintain same standard as "native" students.
4. Required courses may be repeated on a no credit basis and a grade of B must be attained to maintain major status. (This does not, in any way, alter the provision of No. 2).
5. All of the provisions of this policy are applicable as of September 1, 1976.
6. A departmental appeal board consisting of the chairman, two faculty members, and the two senior student representatives will be convened to deal with exceptional cases.

RECOMMENDED PROGRAM FOR SOCIOLOGY MAJORS (B.S.)

FRESHMEN
(limit of only one sociology course per semester)

Fall Semester

History of Western Civilization I
Introductory Sociology

Spring Semester

History of Western Civilization II
Contemporary Social Problems

SOPHOMORE
(limit of no more than two sociology courses per semester)

Fall Semester

Sociology Elective (at 200 level)
Sociology Elective (at 200 level)
Logic

Spring Semester

Social Science Research Methods

JUNIOR
(limit of no more than two sociology courses per semester)

Fall Semester

Social Theory I

Spring Semester

Sociology Elective (at 300 level)
Sociology Elective (at 300 level)

SENIOR
(limit of no more than two sociology courses per semester)

Fall Semester

Sociology Elective (at 300 level)

Spring Semester

Independent Studies or Senior Seminar

RECOMMENDED PROGRAM FOR SOCIOLOGY MINORS

Introductory Sociology, a maximum of six (6) hours must be taken at both the 200 and 300 levels.

COURSE DESCRIPTIONS

So 100 Introductory Sociology.
Cat. 1. 3 hrs.
Prerequisites: none.
The formal study of the nature of group behavior and social interaction through the analysis of the structure and values of human groups.

So 110 Courtship and Marriage in America.
Cat. 1. 3 hrs.
Prerequisite: none.
The study of American customs of courtship and marriage; attention will be given to past and present marital laws, theories of mate selection, marital prediction, and marital roles.

So 120 Cultural Anthropology.
Cat. 1. 3 hrs.
Prerequisites: none.
Modern cultural anthropology with cross-cultural emphasis on the human capacity for culture, social system, technology, ideology and significant aspects of the process of fieldwork.

So 130 Race and Ethnicity.
Cat. 3. 3 hrs.
Prerequisites: none.
The study of dynamic processes and patterns of inter-group relations with special emphasis on role of ethnic and racial variables.

So 200 Contemporary Social Problems.
Cat. 1. 3 hrs.
Prerequisites: So 100.
A critical analysis of the social, political, urban and industrial changes in American society, introducing specific problems of contemporary American life.

So 201 Social Stratification.
Cat. 1. 3 hrs.
Prerequisite: So. 100.
Recurrent patterns of inter-group contact, differentiation, ranking and evaluation; the theories and concepts which explain the development process of open and closed societies, the characteristics of stratification systems, and their pervasive influence on social institutions.

So 202 Sociology of Education.
Cat. 3. 3 hrs.
Prerequisites: So 100.
Study of education, emphasizing the social process as well as the instiutional structure; social roles of teachers, administrators, pupils, the group basis of education, and community influence.

So 203 The Sociology of Mental Health.
Cat. 3. 3 hrs.
Prerequisites: So 100.
Social factors and social processes that contribute to mental health and mental disorders; the social definitions of mental disorders as forms of social deviance; the social facets in the treament and care of disordered persons; and the social aspects of mental health and the prevention of mental disorders.

So 204 Sociology of Deviance.
Cat. 3. 3 hrs.
Prerequisites: So. 100.
The study of the social consequences and apparent causes of deviant behavior through the analysis of the processes of socialization, intra and intra-group relations and the social contexts within which deviation is defined.

So 205 Social Science Research Methods.
Cat. 1. 3 hrs.
Prerequisites: So 100.(Required for majors in their sophomore year).
Designed to prepare students majoring in sociology and economics for undertaking research projects; research methodology and presentation of data; field problems used as vehicle of instruction.

So 206 Formal Organizations.
Cat. 3. 3 hrs.
Prerequisites: So. 100.
Discussion of the various sociological theories in formal and complex organizations; discussion on the structure, function and communication with organizations; students will conduct case studies of organizations.

So 207 Sociology of the Family.
Cat. 3. 3 hrs.
Prerequisites: So. 100 .
A comparative cross-cultural approach to the study of family systems, with an emphasis upon the effects of social change.

So 208 Juvenile Delinquency.
Cat. 3. 3 hrs.
Prerequisites: So. 100.
An examination of the social and legal phenomena surrounding youthful offenses and offenders; the postualtes of sociological studies and theories, both classical and contemporary, of the conditions, causes, çonsequences, and correctional aspects of this form of deviant behavior will be considered in teh context of community responses, popular and procedural, past and present, to this problem.

So 209 Collective Behavior.
Cat. 3. 3. hrs.
Prerequisite: So. 100.
A study of the interactive processes by which new norms and forms of social organization emerge in the crowd, the public, and the social movement; attention will be given to those forms of collective behavior that are most productive of social change.

So 210 Medical Sociology.
Cat. 3. 3 hrs.
Prerequisite: So 100.
This course will deal with the social organization of health agencies (e.g. hospitals, VHA, nursing homes, clinics, etc.) and the patterns of interaction within which doctors, nurses, patients, and staff function; discussion of the attitudes held by the medical staff toward terminal patients and death in the hospital setting; an analysis of the social-psychological processes of becoming a patient, the processing of the patient within the health agency, and the career of the patient, emphasis on the interpersonal relations between doctors, nurses, hospital staff, patients, and patients' families within the hospital setting and outside it.

So 211 Criminology.
Cat. 3. 3 hrs.
Prerequisite: So 100.
An orientation to the study of crime within a theoretical perspective including formulation and application of definitions of crime and criminality the development of criminal behavior, and the construction of concepts of criminality; the ideals of justice and individual freedom as they are found in the contemporary literature of the sociology of crime as well as with the mechanisms of investigation, apprehension, judgment, incarceration, parole, pardon, probation, etc.

So 215 Sociology of Religion.
Cat. 3. 3 hrs.
Prerequisites: So 100.
Designed as a comparative study of religious institutions and systems of belief with emphasis on the mystical and natural components of the religious phenmena.

So 220 Social Theory I.
Cat. 3. 3 hrs.
Prerequisites: So 100.
The study of the fundamental ideas and the intellectual traditions which influenced the development of sociological theory and method. The course places emphasis on the classical of school of Postivistic Organicism and the theoretical contributions of Comte, Spencer, Marx, Toennes, Durkheim, and Simmel.

So 300 Urban Sociology.
Cat. 3. 3 hrs.
Prerequisites: So 100 and 3 hrs. at 200 level.
The history of the city; the urban phenomena including the social psychology of man in the city, the city as a social system and urban problems connected with social planning in urbanized areas; the contemporary American metropolis with some attention to cross-cultural urban phenomena as well.

So 301 Social Psychology.
Cat. 3. 3 hrs.
Prerequisites: So 100 and 3 hrs. at 200 level.
Dynamics of small group involvement and its effect on the individual's psychology as shaped by environmental influences.

So 303 Statistical Analysis.
Cat. 1. 3 hrs.
Prerequisites: So 100.
Basic tools of statistical analysis appropriate to research in the social sciences; topics include measures of central tendency, hypotheses testing, time series, index numbers, regression and correlation.

So 305 A/B Field Work.
Cat. 3.
Prerequisites: So 100 and 6 hrs. at 200 level.
Introducing students to field work and collection of data based on participant observation of other observational methods, or on conversational interviewing methods; the literature on techniques of field work and methodological problems of on-going field observations.

So 306 Political Sociology.
Cat. 3. 3 hrs.
Prerequisites: So 100 and 3 hrs. at 200 level.
The social foundations of political phenomena, and concern with social movements, the relationship of social conditions and emergence of political institutions, the social structural bases of politics and politics of social change in history.

So 307 Social Change.
Cat. 3. 3 hrs.
Prerequisites: So 100 plus 6 hours at 200 level.
Analysis of the causes, characteristics, and consequences of modifications in established patterns of interaction and standards of conduct in society; role of innovation, invention, and modernization in social change; discussion of various theoretical approaches to the study of social change including evolutionary theory, conflict theory, functionalism, and others; study of change in American society as well as selected comparative case studies.

So 320 Social Theory II.
Cat. 3. 3 hrs.
Prerequisites: So. 220.
An analysis of the development of conflict theory with emphasis on the Theories and contributing theorists of the Behavioristic Schools.

So 321 Contemporary Social Theory.
Cat. 3. 3 hrs.
Prerequisites: So. 220
An analysis of the analytic devices conceptual schemes and models used by contemporary theorists; the course will emphasize structural sociology and the on-going process of theory development.

So 410 Senior Seminar in Sociology.
Cat. 3. 3 hrs.
Prerequisites: Senior Sociology majors only.
Each year this seminar offers seniors a chance for advanced study in a selected area of sociology; topic and details of the course are announce shortly beofre the start of the semester.

So 500 Independent Study in Sociology.
Cat. 3. 1-6 hrs.
Prerequisite: Consent of Instructor.
Open to Senior sociology majors only.

Urban Studies

Associate Professor:
Langlois

Assistant Professor:
Power, Powers

A major in Urban Studies is one way of answering the question: How do I pursue a career in social work, human services or community and environmental planning?

The Department of Urban Studies has as its two central goals, to prepare students for the world of work and to send each year many members of the senior class on to graduate school in such areas as social work, community planning, criminal justice and law.

To accomplish these objectives, the Department's educational philosophy emphasizes interaction between teacher and student and classroom preparation and community experience. We believe one cannot adequately plan, deliver or administer services by sitting silently in a classroom seat. You must learn to integrate cognitive understanding with helping skills, and this process must be conducted in various settings that enable each student to develop a diverse and functional knowledge base.

The Department of Urban Studies views itself as a pre-professional program. Hence, we have an emphasis on structured learning experiences that are designed to introduce students to a series of planned interactions in the classroom as well as activities that occur in the community. Our laboratory and internship experiences already span the spectrum from Worcester to London and from Washington to Japan. Our courses and field work activities are designed to provide each student with an individualized learning program that will inform and sensitize him or her to a variety of ethnic, racial and cultural perspectives.

While the Urban Studies faculty is constantly attempting to refine this interactive dynamic, we expect each student to be an active participant and practitioner in designing a program of study.

Our traditional academic course offerings are rigorous and supervision in the community experience is intensive.

An Urban Studies student is able to build a program of study around two major areas of concentration. These areas include (1) health and human services with an emphasis on social work and (2) public services and urban planning with its emphasis on the management of man and the environment. Both of these concentrations share a series of core courses that permits every student to participate in a set of similar academic experiences. It is also necessary to elect courses in the concentration outside of his or her chosen field.

REQUIREMENTS FOR THE MAJOR IN URBAN STUDIES

A student majoring in Urban Studies must complete 36 credits in formal classroom courses. These courses are defined as ones offered by the faculty of the Department of Urban Studies on a regularly scheduled basis and can be identified in the Worcester State College catalogue by a number between UR 101 through UR 550. Courses involving students in off-campus practicum or internship activities can be identified in the catalogue by numbers ranging from UR 600 through UR 699. These experiential courses count for Urban Studies credits above the required 36 credit hours in formal classroom activities.

In certain cases a transfer student entering Worcester State College with 68 or more advanced standing credits may be allowed to complete the degree requirements in the Department by selection of courses in a manner other than that described above. All arrangements must be decided before the student commences study in the Department.

A major may not elect an individualized nor experiential course until completion of 21 credit hours in classroom course offerings. Included in the required 21 credits are the four required core courses. In addition to the required four core courses, all majors are advised to elect the research seminar and select from the course options listed under each concentration.

REQUIRED CORE COURSES

All major and minors in Urban Studies must complete the following core courses:

Ur 101 Introduction to Urban Systems
Ur 212 American Metropolitan Evolution
Ur 213 Human Identity in the Urban Environment
Ur 320 Human Needs and Social Services

Students should complete the core courses as soon as possible after entering Worcester State College. For transfer students with advanced standing, the core curriculum should be completed in their first year of study in the Department.

CAREER CONCENTRATIONS

At this time there are two concentration options available to the major in Urban Studies. A student should select one of these options.

Health and Human Services
Public Service and Urban and Community Planning

Health and Human Services

This concentration is designed for individuals who are interested in establishing a career in areas that relate to health and human services. Students who desire to become involved with organizations dealing with juvenile offenders, community health, programs for the lederly, neighborhood centers and other social service agencies should find this area of specialization both challenging and meaninful. In emphasizing the development of helping skills within a sphere of cognitive understanding that focuses on delivery systems, this concentration explores the issues related to public policy and planning. Every effort is made to provide the student with a blend of personal helping skills, traditional classroom activities and an exploration of the world of work through a structured learning experience in public or private agencies. The Department's program objectives have been designed to facilitate interaction among faculty, students and the Department believes that its graduates will be prepared to successfully compete in the job market. This integrative background has been a major factor in helping our students gain advanced standing in social work programs throughout the country.

Ur 321 Social Work in the Urban Society
Ur 312 Justice and the Urban Society
Ur 313 Crime and the City
Ur 330 Urban Youth in American Society
Ur 331 Public Policy and Youth Services
Ur 322 Urban Housing Dilemma
Ur 340 Urban Health and Social Services Systems
Ur 400 Social Casework in the Urban Setting
Ur 410 Group Conflict in the Urban Community
Ur 500 Seminar on Urban Research
Ur 511 Selected Topics in Urban Studies
Ur 513 Seminar in Current Urban Problems

Students selecting this concentration should complete the required 36 credits in classroom activities by electing offerings from the Public Service and the Urban Planning Concentration. On completing the core curriculum and upon entering into an area of concentration, plans should be formulated around the construction of a practicum and/or internship experience. This planning process will entail ongoing interaction with your faculty advisor.

Public Service and Urban and Community Planning

Students interested in pursuing a career as a town, city or regional planner or who have an interest in working in a city, state or Federal agency are advised to chose this area of specialization. As local communities discover the financial benefits that can be gained by the coordination of services and programs, the demand for trained professionals who are able to operationalize the planning process will increase during the next several years. Students electing this concentration will work in close harmony with the Departments of Management, Geography and Economics. Students may apply credits in Public Administration within the Management Department toward their major in Urban Studies. To plan effectively in today's complex environment, one must master many skills. Of paramount concern is the development of a broad knowledge base founded in several academic disciplines. In addition to this sound traditional background, students are encouraged to become involved with agencies that make or carry out policy for their community. Intern-

ship opportunities span the spectrum from serving as an aide to an elected official of the State to working as an administrative assistant in any number of positions from Worcester to Washington.

The classroom activity within the Department emphasizes the analysis of community structure, organizational development and environmental planning. Because the entire process involves working with other people in an existing social structure, the curriculum also attempts to assist each student to develop a working knowledge of various interpersonal and group skills. This blend of practice and theory has enabled our students to gain admission to several of the nation's foremost graduate programs, as well as providing an entry to employment within the planning and public service fields.

Public Service and Urban and Community Planning Concentration

Students chosing this area of concentration should select five (5) courses from the following offerings:

Ur 210 Analysis of Urban Systems
Ur 211 The Structure and Function of Urban Organizations
Ur 301 Cities and Suburbs
Ur 310 Power, Politics and Decision Making
Ur 340 An Analysis of Environmental Issues
Ur 341 Public Policy in Environmental Issues
Ur 410 Group Conflict in the Urban Community
Ur 500 Seminar on Urban Research
Ur 511 Selected Topics in Urban Studies

Students chosing this concentration should complete the required 36 credits in classroom activities by electing offerings from the Health and Human Service concentration or by selecting courses within the Public Administration area within the Management Department at Worcester State College. Courses in this area have been approved for credit towards a major in Urban Studies. Once a student begins work in his or her concentration active planning should begin toward developing a meaningful internship experience.

SEQUENCE OF STUDENT'S PROGRAM

The Department does not set a required sequence for taking courses in Urban Studies. It does strongly recommend that students attending Worcester State College for a period of over three years complete the core curriculum before undertaking an area of concentration. However, a student may begin specialized courses before completing all the core courses.

RESEARCH SEMINAR IN URBAN STUDIES

Ur500 Research Seminar in Urban Studies is strongly suggested of all majors in Urban Studies. A student may elect the Research Seminar in Urban Studies any time after completing the core curriculum. However, preference in this course at any time will be given to juniors and seniors.

Students anticipating the election of an experiential course should elect the Research Seminar before the time they plan to undertake a practicum of internship.

EXPERIENTIAL COURSES

Urban Studies majors are strongly urged to consider addition of an individually-oriented experiential off-campus opportunity offered by the Department. Supervised activity in a community or planning agency can be a rewarding experience in the process of integrating what one learns in the classroom with what one finds in the world of work. No student may elect an experiential course until completion of 21 credits and the four core courses cited earlier.

SUPPLEMENTING THE MAJOR IN URBAN STUDIES

A student may supplement and enrich the Urban Studies major by taking appropriate courses from cooperating departments at Worcester State College or through the Worcester Area Consortium for Higher Education.

Except for the existing arrangement with the Management Department, no credits taken in other departments of institutions can be substitute for the 36 credits in classroom activities required by the Department. Approval of the department is required for courses taken outside the department or from other institutions.

THE MINOR IN URBAN STUDIES

A minor in Urban Studies must complete a minimum of 18 credits.

Included in these 18 credits are the four required core courses. Any two courses may be taken thereafter to complete the minor.

A minor in Urban Studies may not take an individual or experiential course and may not enroll in Ur 500 Research Seminar in Urban Studies.

All minors except those specifically excepted by the Department Chairperson are governed by those requirements.

COURSE DESCRIPTIONS

Ur 101 Introduction to Urban Systems.
Cat. 1. 3 hrs.

Prerequisites: none. A broad overview of urban life using social science theory as a basis for understanding patterns of urban growth, the process of urbanization, the phenomenon of urbanism and the distribution of urban resources. Required for majors. Open to non-majors to satisfy distribution requirement.

Ur 210 Analysis of Urban Systems.
Cat. 1. 3 hrs.

Prerequisite: Ur 101.

The compilation and interpretation of surveys conducted by students, the analysis of urban activity and the effectiveness of various observational methods; the substantive theme will be livability in urban areas, derived by examining satisfaction-dissatisfaction patterns concerned with conditions and services. Required for majors.

Ur 211 The Structure and Function of Urban Organizations.
Cat. 1. 3 hrs.

Prerequisite: Ur 101.

Insights and theories deriving from various social science fields as they concern the individual's involvement in various organizational patterns; particular attention given to patterns of work organizations. Required for majors.

Ur 212 American Metropolitan Evolution.
Cat. 2. 3 hrs.

Prerequisite: Ur 101.

The contemporary industrial city viewed from a multi-disciplinary approach; topics include urban migration patterns, community and neighborhood formation and transition, social and occupational differentiations, and the impact of urban stress upon the lifestyle of the individual; student experience in the community and research based upon this off-campus activity.

Ur 213 Human Identity and the Urban Environment.
Cat. 1. 3 hrs.

Prerequisites: Ur 101.

A number of selected readings that portray a broad spectrum of human needs and aspirations used to provide the student with an understanding of the varied perceptions of individuals residing in urban areas; course attempts to explore the capacity of urban residents to adapt to new patterns of social interaction and to a change oriented environment.

Ur 301 Cities and Suburbs.
Cat. 1. 3 hrs.

Prerequisite: Ur 101.

A study using social science theory of the central city and its relationship with suburban areas. The course employs thematic approaches that seek to probe the myth and reality of city-suburban systems, focuses upon contemporary relationships and problems, and anticipates future developments in such areas as economic patterns, demographic characteristics, social structure, institutional development, governmental forms, political behavior, and differing attitudes.

Ur 310 Power, Politics and Decision Making in Urban Communities.
Cat. 1. 3 hrs.
Prerequisite: Ur 101 or permission of the Instructor.
Exploration from a multi-disciplinary approach of power and various forms of political activity reflecting the social structure and conditions of the urban community; the concepts of urban power structure, community dynamics and decision making will be investigated, as they apply to a wide range of urban functions and issues; field work experience is required.

Ur 311 Urban Politics
Cat. 1. 3 hrs.
Prerequisites: Ur 101 or permission of the Instructor.
Urban political behavior and perceptions examined from a variety of social science perspectives, with an analysis of governmental structures and functions, financing, poverty, urban physical deterioration, crime and transportation, field work experience is required.

Ur 312 Justice and the Urban Society.
Cat. 1. 3 hrs.
Prerequisites: Ur 101 or permission of the Instructor.
The scope and nature of law as applied to important aspects of contemporary urban society; special attention placed upon the relationship of law codes and the courts with regard to minorities, the poor, and the young; issues such as public safety, zoning, housing, community needs and legal services examined.

Ur 313 Crime and the City.
Cat. 1. 3 hrs.
Prerequisites: Ur 101 or permission of the Instructor.
An introduction to criminal justice agencies and the processes involved in the administration of justice; issues involving the legislative process, the police, the prosecutor, the courts and corrections studies; the far-reaching problems of law enforcement in a democratic society viewed; field work experience required.

Ur 320 Human Needs and Social Services.
Cat. 1. 3 hrs.
Prerequisite: Ur 101 or permission of the Instructor.
Introduction to the origins, goals, values and methods of urban social agencies; identifying basic human needs of urban dwellers, especially those of minority groups, the poor, the aged, the infirmed and the young.

Ur 321 Social Work in the Urban Society.
Cat. 1. 3 hrs.
Prerequisites: Ur 101 or permission of the Instructor.
Study of the organized efforts to meet the welfare needs of individuals and groups through federal, state, local and community-based institutions, agencies and programs; particular reference to the Commonwealth of Massachusetts and students are encouraged to participate in the field work activity.

Ur 322 The Urban Housing Dilemma.
Cat. 3. 3 hrs.
Prerequisites: Ur 101 or permission of the Instructor.
Introduction to the nature of housing and its importance as more than shelter; analysis of the various factors that have shaped the nature, location, and supply of urban housing with special emphasis on the impact of federal policies, including an examination of the most recent federal approach to the urban housing dilemma, housing allowances.

Ur 330 Urban Youth in American Society.
Cat. 1. 3 hrs.
Prerequisite: Ur 101 or permission of the Instructor.
The role of youth in contemporary urban society viewed from various social science approaches; special focus given to the changing status of the urban family, the dynamics of youth cultures, the accumulation of knowledge, the influence of peer-group attitudes, responses to authority and the formation of values by urban youth.

Ur 331 Public Policy and Youth Services.
Cat. 1. 3 hrs.
Prerequisites: Ur 101 or permission of the Instructor.
The role that attitudes and public opinion play in the formulation of public policy and and how they affect the nature and kind of services offered to children and parents in urban society; current practices as well as an examination of various experimental and innovative services.

Ur 340 Public Policy in Environmental Systems.
Cat. 1. 3 hrs.
Prerequisites: Ur101 or permission of the Instructor.
An examination of urban ecosystems, including optimization of technological productivity relative to environmental constraints; new approaches to the design of residential units and transportation devices that would maximize effective land use; systems approach employed with emphasis on energy processes, structure-function interactions and input-output analysis.

Ur 341 Public Policy in Environmental Issues.
Cat. 1. 3 hrs.
Prerequisites: Ur 101 or permission of the Instructor.
Identification and analysis of factors affecting the formulation of public policy for urban environments; the evolution of public policy and the development of innovative solutions for unresolved urban environmental challenges; proposing new approaches for wider community participation in policy making; the roles of federal and state regulatory agencies included.

Ur 342 Urban Health and Social Service Systems.
Cat. 1. 3 hrs.
Prerequisites: Ur 101, Ur 320.
An analysis of health care delivery systems as they exist in the diverse of social services within that system. Attention will be given to the consumer issues of access, accountability and quality of service as well to the issues of support services in the health field.

Ur 400 Social Casework in the Urban Setting.
Cat. 2. 3 hrs.
Prerequisites: permission of Instructor.
This will be an advanced course for Urban Studies majors who have already taken Social Work in the Urban Environment. The course will introduce students to casework approaches, such as task-centered, problem solving, and functional approaches. This course is specifically designed both for those intending to go to graduate programs in social work or other service areas, and those intending to engage in front line human service work. Students involved in the course will be required to concurrently take a Practicum or other field work course.

Ur 410 Group Conflict in the Urban Community:Implications for Action.
Cat. 2. 3 hrs.
Prerequisites: Permission of Instructor.
Drawing on the nature of group conflict within urban communities, this course will examine strategies for resolving such conflict. Factors such as social class, age groups, ethnicity, race and ideology will be included. Course emphasis is upon relationship or urbanization and group conflict within the changing urban structure. Strategies emphasized will be community development and forms of community.action. Case studies of these strategies will be examined in terms of their potential to resolve conflict. Participating students will be involved in a community action component in a local agency. The course is designed to equip potential planners, policy makers, and front line human service workers with an understanding of the nature of such conflict within urban environments and its implications for action in the human services sphere.

Ur 500 Seminar on Urban Research.
Cat. 1. 3 hrs.
Prerequisites: Ur 101 or permission of Instructor.
Course is designed for Urban Studies students and required of those who plan to undertake a community practicum and seeks to provide an understanding of urban-based research projects, methodologies, and techniques in gathering, analyzing, and reporting data as well as various forms of surveys, polls, interview strategies, samples, and field experience. Student field work and written research report are required.

Ur 510 Assigned Readings in Urban Affairs.
Cat. 3. 3-6 hrs.
Prerequisites: Ur 101 and permission of the Instructor.
Directed reading for students who are interested in special topics related to their academic program.

Ur 511 Selected Topics in Urban Studies.
Cat. 3. 3-6 hrs.
Prerequisites: Ur 101 and permission of the Instructor.
In-depth exploration of selected problems in urban settings, designed for each student to fulfill individual needs and interests; reports embodying the results of conceptual exercises, experimental evidence, literature reviews and field investigation required.

Ur 513 Seminar in Current Urban Problems.
Cat. 1. 3 hrs.
Prerequisites: Ur 101 and permission of the Instructor.
Investigation of selected urban issues; results of detailed surveys of literature presented by students. Required of all majors.

Ur 600 Practicum in Urban Studies.
Cat. 3. 3 hrs.
Prerequisites: Ur 101 or permission of Department.
Course offers advanced student the opportunity of experiential off-campus involvement in a social or health agency, government department or division, planning department or an environmental conservation group.

Ur 612 Internship in Urban Studies.
Cat. 1. 6-12 hrs.
Prerequisites: Ur 101 and permission of the Instructor.
A community-based internship is possible for students in social and health agencies, the courts, government departments or bureaus, environmental conservation or planning, or in non-traditional schools or educational programs.

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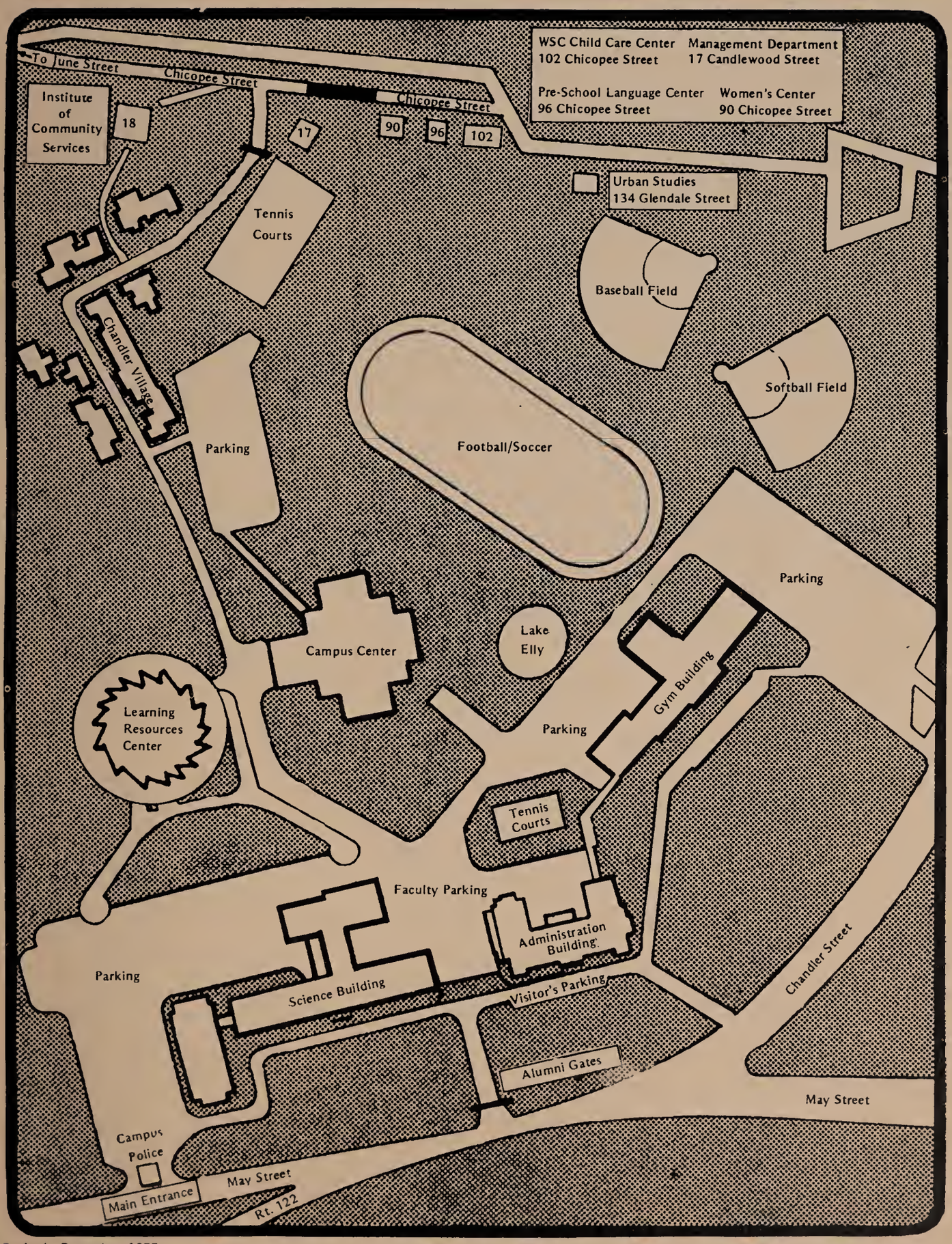

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